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ABSTRACT

The study addressed the question of the validity of the Scholastic Aptitude Test (SAT) and the accompanying Student Descriptive Questionnaire (SDQ) in predicting first year college grades and student persistence through two years of college study for hearing impaired students. Two other sets of predictors, namely, demographic variables such as age, race and sex, and factors specifically related to deafness were also examined. Principal findings included the following: (1) correlations of the predictors with college grades and associated regressions showed that both the SAT and high school grades were good predictors both for the handicapped groups and the control groups; (2) the SAT verbal and mathematics tests, in combination, were found to be unbiased when a sample of deaf candidates was compared with a sample of hearing candidates, both of whom reported scores to the institution in the study where deaf students were mainstreamed with the hearing students; (3) selected questions from the SDQ biographical questionnaire given with the SAT were, as a group, good predictors of college grades for both deaf and hearing samples; (4) the set of demographic predictors that related to deafness characteristics did not significantly forecast college grades for the handicapped; and (5) persistence through 2 years of college study was predicted significantly for two out of three institutions in the study separately, and in combined sample over all schools, when SDQ responses such as high school rank, class size, number of areas in which help was desired in college, participation in extra-curricular activities in high school, and certain academic variables were employed in discriminant analyses to distinguish persisters from non-persisters. (Author/CL)

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IDENTIFYING FACTORS THAT PREDICT DEAF STUDENTS' ACADEMIC SUCCESS IN COLLEGE

FINAL REPORT

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Abstract

New laws expanding educational opportunities for the handicapped have mandated validity studies for the hearing impaired group, relating background, grades and test scores to college performance. The present study adresses the question of the validity of the Scholastic Aptitude Test (SAT) and the accompanying Student Descriptive Questionnaire (SDQ) in predicting first year college grades and student persistence through two years of college study. Two other sets of predictors, namely, demographic variables such as age, race and sex, and factors specifically related to deafness were also examined.

Three colleges having large numbers of deaf students are considered: an institution with an all-deaf undergraduate student body, an institution where deaf students can take part of their coursework with hearing students and an institution where deaf students are fully mainstreamed.

Principal findings included the following:

(1) Correlations of the predictors with college grades and associated regressions showed that both the SAT and high school grades are good predictors both for the handicapped groups and the control group.

(2) The SAT verbal and mathematics tests, in combination, were found to be unbiased when a sample of deaf candidates was compared with a sample of hearing candidates, both of whom reported scores to the institution in the study where the deaf students are mainstreamed with the hearing students.

(3) Selected questions from the SDQ biographical questionnaire given with the SAT were, as a group, good predictors of college grades. This finding applied both to deaf and hearing samples.

(4) The set of demographic predictors and that related to deafness characteristics do not significantly forecast college grades for the handicapped.

(5) Persistence through two years of college study was predicted significantly for two out of three institutions in the study separately, and in the combined sample over all schools, when SDQ responses such as high school rank, class size, number of areas in which help was desired in college, participation in extra-curricular activities in high school, and certain academic variables were employed in discriminant analyses to distinguish persisters from non-persisters.

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Chapter I

Introduction and Background

A. Purpose of the project. The purpose of this study is to improve current understanding of the factors that make for deaf students' academic success in college. Three colleges having large numbers of deaf students are examined: an all-deaf institution, referred to hereafter as Institution A; an institution where deaf students can take part of their coursework with hearing students, designated Institution B; and an institution where deaf students are mainstreamed, designated Institution C. These institutions are not actually named in this study for confidentiality reasons. College grade point average and the dichotomous variable of persistence vs. dropout are to be predicted by high school grades, Scholastic Aptitude Test (SAT) scores, a biographical inventory and factors specific to deafness.

The principal objectives of this report may be restated as follows: (1) to identify academic and nonacademic variables contributing to the prediction of college academic success and persistence; (2) to discover in what way, if any, the Scholastic Aptitude Test of the College Board over- or underpredicts college success for the deaf compared to the hearing in the mainstreamed institution; (3) to predict the criterion of persistence in all 3 institutions, based on the predictors mentioned; and (4) to develop a methodology for comparing prediction systems for deaf students across these three types of postsecondary schools.

Other measures of success for college students, often more meaningful to them, might be given, such as a satisfactory religious outlook, social well being and preparation for a vocation. This project concentrates on criteria which lend themselves more easily to quantification.

B. Justification and general background

1. The hearing impaired and the law. The deaf constitute an important section of American society. Admissions tests are part of the process used to select both handicapped and non-handicapped college candidates. Deaf candidates have been shown to score poorly on these tests, especially on the verbal sections. In order to ensure fairness for the deaf handicapped group, it is important to conduct studies of the validity of these tests in predicting college success.

The issues surrounding validity in this case are complex. The Rehabilitation Act of 1973, Section 504, represents a major effort to provide for the participation of handicapped people in the mainstream of modern life without discrimination. In 1977, regulations implementing this section extended safeguards for the testing of the handicapped. Due to apparent inconsistencies between these safeguards and state-of-the-art research in educational testing, important aspects of these regulations have not yet been enforced. In particular, the Regulations[1]

[1]Nondiscrimination on the Basis of Handicap. Federal Register, Rules and Regulations, Part IV. May 4, 1977. Washington, D.C.: Department of HEW, 22676-22702.

specify that an institution subject to the Rehabilitation Act of 1973:

> "May not make use of any test or criterion for admission that has a disproportionate, adverse effect on handicapped persons unless the test has been validated as a predictor of success in the education program in question or unless other criterion having less adverse affect are not shown by the Director of the Office of Civil Rights to be available." [Section 84.42 (b) (2)]

Furthermore, such institutions:

> "May base prediction equations on first year grades, but shall conduct periodic validity studies against the criterion of overall success in the education program or activity in question in order to monitor the general validity of the test scores." [Section 84.42(d)]

2. Validation of tests for the deaf a necessity. The research in validating the SAT for the deaf leaves it unclear whether the test has validity for deaf students. Furthermore, the issue is complicated by the fact that while some deaf students attend mainstreamed postsecondary institutions where the SAT is required, others attend colleges with a curriculum largely centered around the deaf. Some deaf students take the SAT in a regular administration (with perhaps minimal support services such as an interpreter to answer questions), while others take a special administration with indefinite time limits and perhaps other aids. A further issue involves the fact that the

tests are not now given separate norms for any handicapped population. Because of these ambiguities related to the meaning of validity for the handicapped, the Office of Civil Rights (OCR) sought help from a special panel appointed by the National Research Council (NRC). The Panel recommended in 1982 that a four-year research and development effort be undertaken to find solutions to such technical problems.[2]

The present exploratory study has examined the predictive validity of several types of variables: SAT scores, high school grades, a biographical questionnaire administered with the SAT, sex, age, race, degree and age of onset of deafness and other characteristics related to deafness. The criteria are to be college grade-point average and persistence through two years of study. Three postsecondary institutions for the deaf have supplied data for the criterion variables: an all-deaf institution, a college for the deaf with cross-registration in other colleges for the hearing on the same campus, and a fully mainstreamed institution where relatively large numbers of deaf students attend classes with the hearing.

C. Review of the literature

1. Studies on the predictive validity of the SAT for hearing college enrollees

a. Validity of the Scholastic Aptitude Test (SAT) for hearing college students. Numerous studies, for both the general

[2]Sherman, S. W. and Robinson, N. M. (Eds.) Ability Testing of Handicapped People: Dilemna for Government, Science and the Public. Washington, D.C.: National Academy Press, 1982.

population and various subgroups, have predicted college freshman GPA from SAT scores and high school grades. Thirty-five regression studies have been discussed by Breland (1979). They show in general that the combination of high school grades, SAT-V and SAT-M predict college performance better than any of these variables alone. However, Blacks' freshman GPA is generally overpredicted by the predictors mentioned when the regression weights are based on White samples. In contrast, women's freshman GPA is underpredicted when regression coefficients are based on predominantly male samples.

Breland summarized 58 correlational studies as follows: (1) The median validities for white samples were: high school rank alone, .48, verbal test scores alone, .38, quantitative test scores alone, .35, and the combination of high school record and tests, .54; (2) black sample medians showed little difference. Studies of Hispanics in the U.S.A. (Duran, 1983) show these median validities: high school rank alone, .30; verbal test scores alone, .25; quantitative test scores along, .23; all three predictors combined, .38.

b. Prediction using both the SAT and background. The SAT has also been used to predict in conjunction with background variables. In another monograph (1981), Breland considered biographical inventories in predicting academic success (the criteria usually being freshman GPA and, sometimes,

persistence through the first year). In these studies, the predictive power of the biographical inventory (BI) ranged from .17 to .57. When the baseline predictors of high school record, SAT and class size were entered first, the biographical inventory in one study increased the multiple correlation to .70. Four other studies also showed some increase in multiple R when the BI was added to a similar baseline.

Wilson considered admission stages in a large state university on several academic and nonacademic variables using the Student Descriptive Questionnaire (SDQ) accompanying the SAT. These included self-reported skills in high school subjects, leadership and social areas and artistic fields. For an out-of-state sample the multiple correlations for the best selections of five variables were .29, .49, .17, and .44, respectively, on the criteria apply/not apply, accept/reject, enroll/not enroll and high/low freshman GPA. For an in-state sample the multiple correlations were .22, .39, .22 and .59, respectively. Harrison (1979) performed discriminant analyses and canonical correlations on a subset of this data, and found a significant difference between the applied-not accepted, applied-accepted-not enrolled and applied-accepted-enrolled groups, on the basis of the predictors.

The SDQ is used in the present study. All these studies show that biographical information can increase the validity of a selection procedure.

2. Predictive studies of performance of hearing-impaired students

a. Background. The studies cited do not answer the question of predictive validity of either tests or background variables for deaf college enrollees. In the spirit of Public Law 94-142 it is desirable to find to what extent deaf testtakers' scores are valid for the same criterion of college success. Many colleges use these scores without any "handicapped" tag, especially if the students take the test during a regular administration. Educational Testing Service and the College Board have cautioned for some years that the scores for all students should be considered only in conjunction with other factors.

Few studies are available for predicting academic progress of the deaf before 1975. In that year, however, Jensema, of the Office of Demographic Studies of Gallaudet College, reported on a study of the Stanford Achievement Test--Special Edition for Hearing Impaired Students (SAT-HI). As a result of the norming of this test, certain scaled scores were made available in which expected achievement of deaf students could be compared with that of hearing students. For the entire deaf sample (from under age 8 to over 19), age norms were computed. Using grade norms of hearing students as a baseline he found that (1)

the average increase in score from grades 3 to 8 was about 50 points for hearing students and only 14 to 31 for the deaf; (2) prelingually deaf students (birth through age 2) fared worse than either those born deaf or the post-lingually deaf in terms of language facility; (3) those in special or mainstreamed programs did better than those in schools for the deaf.

b. Deaf students and the SAT. Practically no studies had related the standardized test scores of deaf students to their freshman college grades in a mainstreamed environment until that of Ragosta and Jones (1982). They used a subsample of students from California State University at Northridge, which is a national center for mainstreaming deaf students into the regular college curriculum. They compared deaf students with a larger sample of hearing students and predicted first-year college GPA from the SAT-V, SAT-M and high school grade point average. The mean scores of deaf students on the SAT-V and SAT-M were 100 and 67 points lower than scores for hearing students. Using only the SAT-V and SAT-M, college success was underpredicted by the regression weights from the hearing sample. However, when high school grade point average was added to the equation, the prediction systems were similar; the multiple R for the deaf for the combination was .58.

Certain other studies by Gallaudet College and the National Technical Institute for the Deaf have shown little

validity of the SAT-V for their deaf students. Nevertheless, both institutions have indicated interest in further validity studies for the SAT for the deaf. The data for the California State University at Northridge will be reanalyzed to include background variables as additional predictors.

3. Student persistence. Another criterion of considerable interest to colleges today, and in particular, those with large numbers of deaf students, is the question of student attrition. A major study by Astin (1972) used a stratified national sample of 217 institutions, including 45,432 students from 4-year colleges. Four criterion measures of persistence were "returned for a second year" (78 percent returned), "received a degree" (47 percent did so), "received a degree or were still enrolled" (59 percent), and "received a degree, were still enrolled, or requested that a transcript be sent to another institution" (81 percent). Using both academic and non-academic predictors (such as test score, high school grades and marriage plans) he found multiple Rs of .28 (returned for a second year) to .34 (received bachelor's degree) for 4-year colleges.

A more recent study by the National Center for Education Statistics (1977) considered both academic and non-academic withdrawals for the freshman and sophomore years. It reported a multiple correlation of .31 for academic withdrawal vs. persistence (including transfer to another institution). Significant regression weights were attached to high school

grades and test scores as well as to economic status, sex, college quality and aspirations, in this research.

In the present study discriminant analysis is employed to predict two-year persistence both within and across three institutions. Both the set of academic predictors (high school grades, rank, etc.) and non-academic predictors (interest, aspirations, etc.) will be employed.

Because standardized test scores for deaf students tend to be lower than scores for hearing students, it is important to study the validity of admissions tests for the hearing impaired. Since biographical information may sometimes increase validity, biographical data is considered in the present study. And since persistence is a useful measure of a student's success, the criterion measures in this study include both grades and persistence.

Chapter II

Methods Used in the Analysis

The following chapters detail the steps taken to discover the predictors of college success for deaf students. In Chapter III data collection and reduction procedures are described. In Chapter IV correlations of predictors with college grades and regressions of sets of predictors on college grades are outlined. In Chapter V a comparison is made in analysis of variance terms between hearing students at Institution C and deaf students at each institution. In Chapter VI an analysis is made relating continuous and discrete predictors to the dichotomous criterion persistence/non-persistence through two years of study.

In general, the analyses follow standard procedures used in many other studies. In this chapter we describe certain special problems that have arisen in this study and ways we have dealt with them. In particular, we consider certain difficulties common to all validation research and then the problems of missing data, of the error term to use in the analyses of variances and covariance and methods for testing the difference between prediction systems for the deaf vs. the hearing.

A. Preliminary caveats

1. Common difficulties in validation research involving comparisons of educational subgroups.

a. Inequivalence in courses and programs of study. In the comprehensive review of validity studies already cited, Breland (1979) names several problems in validation research that apply to the present study.

One is the task of comparability of the criterion, such as freshman college GPA between a nonminority and a minority group. The validity may be lessened by inequivalence of course work for various students. This makes it unfeasible to compare handicapped individuals in Institutions A and B with hearing counterparts. No hearing students attend classes with their hearing-impaired peers at Institution A. In Institution B, although some individuals take some courses with the nonhandicapped, no individuals take all their classes with the hearing in their freshman year; in fact, the number cross-registering in the associated mainstreamed college is not large.

In Institution C all deaf students attend all classes with their hearing counterparts. Consequently in this study the stress is on a comparison between the deaf and the hearing in Institution C. Since many of the predictors are similar, nevertheless, in all 3 institutions, being based on identical scales, some comparison may be made between the prediction systems for the hearing students at Institution C and the handicapped in Institutions B and A as well. However, the criterion of college grade point average, although it has the same range, 0 to 4, does not have precisely the same scale within that range for each separate institution. Consequently, these comparisons are less valid than that within School C. The other criterion, persistence through 2 years of college, may certainly be

put on the same scale (coded 1 = dropout, 2 = persister, blank = unknown).

b. Unreliability of predictors. A further problem in validation is the unreliability of predictors and the criteria. Typically, an increase in reliability of any of these variables will increase the validity with the criterion. For a single criterion y the true validity (x,y_T) increases with an increase in the reliability of y as follows:

$$r(x,y_T) = \frac{r(x,y_U)}{r(y_T,y_U)} ,$$

where r is the correlation and y_T and y_U are the true and uncorrected values of the criterion y; the expression $r(y_T, y_U)$ is the reliability of y (adapted from Lord and Novick, 1968, pg. 70, eq.3.9.7)

In the current study, somewhat surprisingly, most of the deaf have answered most of the questions on the biographical questionnaire given with Scholastic Aptitude Test. In fact the average response rates for the 26 items selected for this study for those exposed to the questionnaire were: School A: 92%; School B: 79%; School C: 94%. Of the 63 items on the total questionnaire only 1 (on musical ability) was discarded because of hearing handicap.

c. Restriction of range. Restriction of range to high-achieving deaf students (the SAT-takers who are actually enrolled in institutions A, B, and C) is a further problem. In this study, the SAT means for the handicapped were certainly

below those for the hearing sample from School C (School A: 91 points below for SAT-V, 91 for SAT-M; School B: 132 points below for SAT-V, 87 points below for SAT-M; School C: 91 points below for SAT-V, 57 points below for SAT-M). Nevertheless, the ranges for the deaf were considerable--for School A: 200-670 on SAT-V, 220-620 on SAT-Q; for School B: 200-650 for SAT-V, 220-710 for SAT-Q; for School C: 200-760 on SAT-V, 220-740 on SAT-Q This compares with a total possible range of 200-800 for each score for the United States as a whole.

Restriction of range usually lowers the observed validities. This does not mean, however, that for deaf students not taking the SAT and so not in this study, the SAT is an appropriate measure. It may simply mean that there is considerable variation in ability among those who presently take the SAT and are in this study. For such students the validities may be meaningful.

d. Self-selection. The problem of omitting students from the samples in this study because they did not elect to take the SAT makes the analysis more problematic. Probably there is some feeling among deaf students that taking the SAT will help them get into college if they do well on it but in only one of the three institutions studied is the SAT presently a general requirement for college admission. In Institution C either the American College Testing Program test, the ACT, or the SAT is required for all

students, including the deaf, but tests are not counted if their high school grade point average exceeds 3.2. In any case few generalizations to the entire group of deaf college attendees should be made from this study.

e. Criterion contamination. A further frequent trouble in validity studies is criterion contamination. In this study, for instance, some of those from College A transfer later to College B and a few from College B to College C. Thus in the persistence analyses the true dropout rate becomes unclear. In College B, in particular, the cumulative grade point average (CGPA) has been used for the freshman grade point average (FYA). Transfer students from other colleges have "contaminated" the criteria by their experience and grades elsewhere. Consequently all known transfer students have been eliminated from all of the analyses. In the persistence analyses across and within colleges, any with duplicate names in the data files for the three colleges, have been eliminated; 4 students were eliminated in this final process although they are included in the regressions since they were regarded as bona fide freshmen by their schools.

B. The problem of missing data.

1. The extent of this difficulty in the present study. In the present study there is considerable missing data. For Schools A and B this seems primarily due to some lack of response on the Student Descriptive Questionnaire, which contains 26

relevant variables; the loss of data here rarely exceeds 25 percent when compared to the SAT scores and the college grade point average which are required in the design of the study. The variable age is present in only about 1/5 of the cases for School B since it is based on "year of taking the SAT" which was unavailable for these cases.

The most severe loss of data occurs for the deaf sample for School C. This is because the data came from several sources. About 68 cases of 150 were matched easily on ETS files; the others were not and the data came from the school at two different time periods. The SDQ responses were available for only about 58 cases; the same was true for high school grade point average. Hearing level was included in the second sample from School C but not in the first, so that only 70 cases were present.

2. Ways of treating missing data. Several ways of treating missing data have been recommended in the literature. The SPSS-X computer programs (1983) suggest either listwise deletion or pairwise deletion. Listwise deletion eliminates the case entirely. Pairwise deletion calculates correlations and regressions based on the data available by correlating variables in pairs whenever both members are present.

In the present study listwise deletion would have severely curtailed the sample sizes. Not only would this have been made the validities less reliable; several other analyses would have suffered from loss of degrees of freedom. Other methods that

have been proposed, when the data are missing in some pattern, have been suggested by Morrison (1976), Dempster, Laird and Rubin (1977) and Little and Rubin (1982). Such methods rely on maximum likelihood and the E-M algorithm and can be quite difficult and expensive on a computer, even for fairly small matrices, especially if there is no pattern to the missing data.

Instead of eliminating cases we have employed a method that is often followed, that of using mean values for the missing cases; we have further calculated covariances, using the maximum N for the variable in question. The program then uses the covariances available as estimates for the missing covariances. The final result is to have a covariance matrix based on the maximum N for any variable. This N is also used as the basis for degrees of freedom in the ensuing regressions. For situations in which we have tested models we have used either the reduced 68-case sample (which has relatively little missing data) for School C or have used only the college grade point average and the SAT scores (for these variables there is complete data). The within-school regressions for School C have been performed both for the larger sample and for the smaller sample. In general, the conclusions cited for these regressions are the same for both samples of data. Since the data may not be missing at random and since the resulting cross products matrix for the regressions is not positive definite with our missing data techniques, there are some unresolved difficulties with this approach.

C. The problem of the correct error term in two way analyses of variance.

1. The conventional method. In traditional analyses of variance there is a certain order of testing effects. Each level of effects is tested against the overall error term. Whether the design is balanced (equal N's in each cell) or unbalanced (unequal N's in corresponding cells as in the analyses in this paper), there is a certain theoretical procedure for testing the effects. For completely crossed designs of orders 2 and higher the highest interaction of order m is tested against the overall error sums of squares, then each interaction of factors of order m - 1 is tested against the same error term and finally the individual factors are tested against this same term.

Keppel (1973, p. 196) provides a table for 2-factor completely crossed analysis of variance similar to the following (we have adapted his notation, added the test of the mean and put "total sum squares" at the top to correspond more closely to the computer output shown later):

Source of variation	Sum of squares	D.f.	MS	F ratio
Total	SS_T	ab - 1		
Mean	SS_M	1	$\frac{SS_M}{df_M}$	$\frac{MS_M}{S/AB}$
Factor A	SS_A	a - 1	$\frac{SS_A}{df_A}$	$\frac{MS_A}{MS_{S/AB}}$
Factor B	SS_B	b - 1	$\frac{SS_B}{df_B}$	$\frac{MS_B}{MS_{S/AB}}$
Interaction A x B	SS_{AxB}	(a - 1)(b - 1)	$\frac{SS_{AxB}}{df_{AxB}}$	$\frac{MS_{AxB}}{MS_{S/AB}}$
Error	$SS_{S/AB}$	ab(s - 1)	$\frac{SS_{S/AB}}{df_{S/AB}}$	

Using SS as "sum of squares," d.f. as "degrees of freedom," and MS as "mean square" it can be seen that each test is made against the same error term $MS_{S/AB} = SS_{S/AB} \div df_{S/AB}$. "S/AB" in the subscript refers to "residual esum of squares over all subjects" and "s" in the degrees of freedom column is the number of subjects.

2. An alternate procedure. Instead of testing each effect against the same error term, the overall error sum of squares, we may proceed as follows. This procedure is recommended by Dr. Donald B. Rubin of the University of Chicago (also a former editor of the Journal of the American Statistical Association and still consulting with Educational Testing Service). It is incorporated in one of the statistical routines in the F4Stat Statistical Package used at ETS. In this procedure each level of source is tested against the error term resulting from

pooling the overall error sum of squares with the sum of squares at each higher level, if any. In terms of the previous diagram we can write the following:

Source of variation	Sum of squares	D.f.	MS	F ratio
Total	SS_T	ab - 1		
Mean	SS_M	1	$\frac{SS_M}{df_M}$	$\frac{MS_M}{E_M}$
Factor A	SS_A	a - 1	$\frac{SS_A}{df_A}$	$\frac{MS_A}{E_L}$
Factor B	SS_B	b - 1	$\frac{SS_B}{df_B}$	$\frac{MS_B}{E_L}$
Interaction A x B	SS_{AxB}	(a - 1)(b - 1)	$\frac{SS_{AxB}}{df_{AxB}}$	$\frac{MS_{AxB}}{E_I}$
Error	$SS_{S/AB}$	ab(s - 1)	$\frac{SS_{S/AB}}{df_{S/AB}}$	

In both models the test for the interaction has the same denominator $E_I = \frac{SS_{S/AB}}{df_{S/AB}}$

However, in the second model, the denominator E_L for the main effects would be calculated from the error sum of squares used in both models plus the sum of squares for the interaction. The error term for testing the mean is similarly derived from the error sum of squares just described for testing the main effects plus the sums of squares for both main effects (after partialling out the effect of one on the other in designs with unequal cell sizes).

In the present study the second method is used throughout; in the analyses of covariance the same logic is used with the covariate and its interaction with the main effect taking the place of two factors and their interaction. The test of the interaction term is the same but for the test of the main effects or a single main effect and a covariate the test is generally more conservative, i.e., less likely to show a significant difference between two levels of a factor, 2 groups of students, etc.

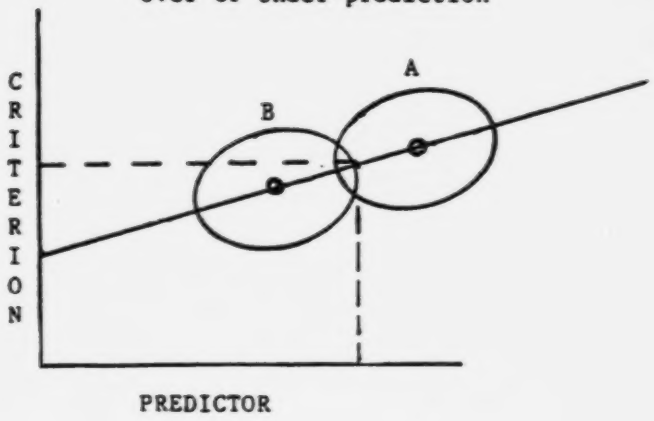
D. Testing the difference between two prediction systems.

1. Gulliksen-Wilks analysis of covariance. To determine whether the Scholastic Aptitude Test (SAT) scores give biased predictions for deaf students we consider the regression lines for each group. Four possible situations for a single predictor are shown in Figure 1 (adapted from Anastasi (1976), p. 193 and given in Breland (1979), p. 5.

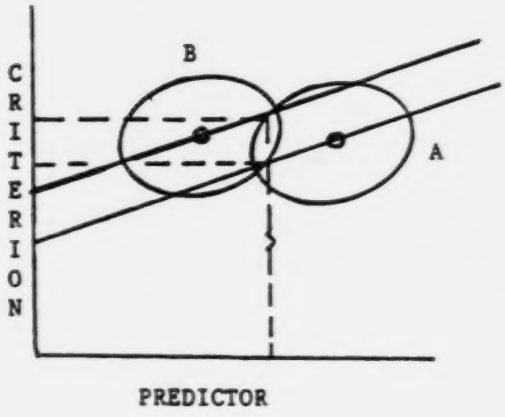
Figure 1.

Possible Situations in Comparing Regression Lines
of Two Groups With A Single Predictor

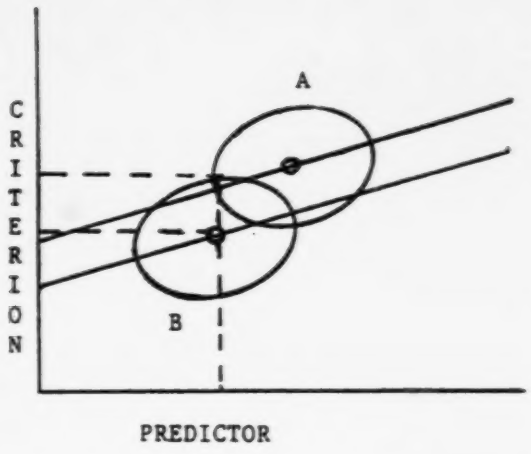
Case 1. Different Means But No Over or Under-prediction



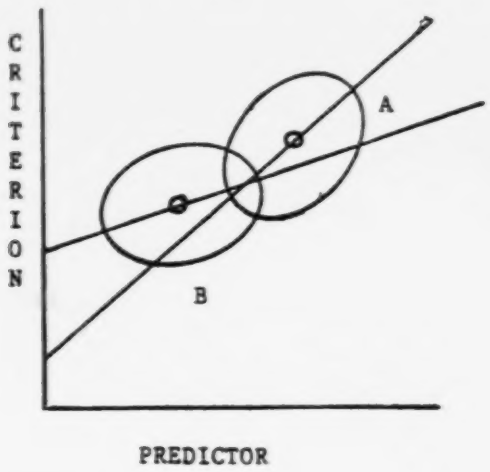
Case 2. Population B. Underpredicted



Case 3. Population B Overpredicted



Case 4. Different Regression Slopes



In order to test the statistical significance of the differences between the deaf and hearing regressions, a method of Gulliksen and Wilks may be used. First, homogeneity of variance for both groups is tested. We have used the F test for testing differences of variances for two groups (Darlington, 1975, pg. 412). If the groups are sufficiently homogeneous (i.e., the appropriate F test is nonsignificant) a further F test for equality of slopes is made. If the F test for the slopes is nonsignificant, a similar test is made for the height of the intercept (i.e., a test of overall over- or underprediction). If this last F test is nonsignificant we have Case 1 in Figure 1, where the prediction system for the normal group will work for the deaf; otherwise, we have either under- or overprediction, Cases 2 or 3. If the slopes are not parallel we have Case 4, so that the independent variables overpredict for some values and underpredict for others.

Underprediction means that if one applies the weights from a regression equation derived from a total or nonhandicapped group and predicts the performance of the handicapped from it the handicapped on the whole do better than predicted. In other words, some handicapped individuals might not be admitted to college who would actually have performed satisfactorily, if the college based its admission policies on the weighted average from the regression equation. In overprediction students would be admitted but would not do as well as expected.

2. Residuals from the regression equation for the nonhandicapped. From this description a further method for testing bias may be used. It is due to Belson (1965) and was developed by Cochran (1976). In this method regression coefficients are computed for the hearing group and applied to the handicapped group. Residuals are then found for all values of the dependent variable (college grade point average). If these residuals are small compared to the standard deviation of the nonhandicapped group we have little bias; if they are positive we have underprediction; if negative, overprediction; if some values are positive and some negative we have nonparallel slopes as in Case 4 above.

In this study we have used both the Gulliksen-Wilks method and the method of residuals. The residuals from the basic model which includes SAT scores and high school grade point average are then correlated with other predictors for the handicapped to determine if there are any of these variables related to the under or overprediction from the residuals, even though the residuals may be small.

Chapter III

Description of the Data

This chapter concerns itself with the collection and delineation of the data samples used for this study. Part A discusses general methods used in data collection. Parts B, C and D give the specific procedures used to collect data for Colleges A, B and C.

A. General procedures for data collection.

1. Introductory remarks. The purpose of this study was to obtain as much useful information as possible on factors predicting college success of deaf students at three institutions. Few restrictions were placed on the variables supplied by the school, to allow for what the school itself thought was important. Consequently, each school provided a somewhat different set of variables. At least the following variables were required in the analyses: (a) the two criteria used in the study, namely (1) first year grade point average (FYA) (or cummulative grade point average (CGPA) in the case of one school where FYA was not available) and (2) some measure of persistence through 2 years of college; (b) Scholastic Aptitude Test scores, both verbal (SAT-V) and mathematical (SAT-M). It was also assumed that all students labeled handicapped in the analyses had in fact some hearing loss. For schools A and B this was a condition of admission; the center on deafness at School C provided rosters only for students acknowledging hearing impairment.

2. Justification for requiring SAT-V and SAT-M scores in this study. The reasons that the SAT-V and the SAT-M were the only predictors required in sample determination are as follows:

(1) the SAT (V and M) is administered nationally to both handicapped and the nonhandicapped. In fact these are the only test scores of any kind common to the data from all 3 institutions of this study.

(2) The SAT has proved to be a good predictor of college success, especially in conjunction with college grades, in many majority and minority samples and in one of the few validity studies on the deaf to date, as outlined in Chapter III.

(3) Since one of the purposes of this report, as outlined in the proposal, is to study possible bias in the SAT, it is important.

(4) Although missing data techniques can partly compensate for many variables the SAT provides a baseline for testing models as shown in Chapter VI.

3. Data gathering approaches. Two general approaches were used in collecting data for this study:

a. In approach A, these steps were followed:

(1) The school concerned was contacted and a list of students' names was obtained with corresponding birthdate, sex and possibly social security number for each,

(2) From this list matches were made to files supplied by the College Board Division of Educational Testing Service. These matches also provided the SAT-V and SAT-M

scores from the ETS computer records, a score for the Test of Standard Written English (TSWE) and the responses to the student descriptive questionnaire (SDQ), provided as an optional part of the registration form for the SAT.

A further variable from these files is a high school grade point average (HSGPA), computed for those students self-reporting their standing in various academic subjects as part of the SDQ. This HSGPA has often been used in validity studies as a surrogate for the grade point average reported by the secondary school the student attended. It has the advantage of being relatively scale free since the SDQ questionnaire is the same for all SAT-takers, regardless of secondary training.

(3) The list of these matches was then sent to the school to provide freshman grade point average (FYA), personal characteristics of the students, factors related to deafness and time of admission. In this way confidential data was released from the school only for those individuals who would be in the study. The combined student record then contains all the variables needed for the analysis.

b. In approach B the sequence of operations is somewhat different. In this method data on first year average of students, including their background characteristics and other variables such as attendance by semester, was supplied initially by the college, together with name, social security number, etc. Next this student identifying

information was matched to College Board files to procure SAT scores and SDQ responses to furnish the student record needed. It should be noted that in this approach, used only for School C, two high school grade point averages were often found, the school-supplied one (HSGPA-SC) and the previously mentioned self-reported HSGPA, supplied from the ETS record.

4. The College Board files used for matching. The College Board Division of Educational Testing Service develops, administers, scores and does research on the SAT for its client, the College Board itself. The files are organized in several ways. In one, the Admissions Testing Program (ATP) listing, all students who have taken the SAT or an achievement test in a given year, are listed alphabetically regardless of institution (if any) they report their scores to. During the last four years, part of this file has been made a direct access file for a minimum of three years after taking any of these tests (or after the last request about them) so that instantaneous information is available on any of the four or five million candidates who are on the active file.

The other file, the Summary Reporting System (SRS), is organized by institution, for those who report their SAT scores. This file is subdivided, by year, for three stages of the admissions process. In the Round 1 file all SAT score-reporters are listed, sorted by institution. In Round 2 the institutions who wish report those who have been accepted of

the original score reporters. Institutions who particiapte may at this stage request descriptive tables from Round 1 for those who have been admitted. In Round 3 the institution adds first year average (including a count of dropouts) to the data from Round 2 and sends the information to ETS.

In the present study two of these files of ETS have been used; the primary method has been to use Round 1 SRS data since this has the largest pool of SRS candidates and is presorted by institution. However, the direct access ATP method has been used with institution C. The goal has been to find as large a sample as possible for each school in the SAT years 1977-1983.

A few students, supplied by the institutions, may not have been matched and so not used in the study, simply because they failed to report scores to the institution. For Institution C, this could not have occurred for the years 1980-1983, since the institution gave us a complete list of their students with both SAT scores and FYA so that these students are on file and were used in some of the analyses, regardless of matching. For Institution A, both the direct access (ATP) and SRS files were searched. For Institution B the College Board division did their own search in the spring of 1983 so that all students accepted at Institution B, who were also on some College Board SAT file for at least the previous three years were included, regardless of whether they reported their scores.

B. Data Collection from Institution A.

1. Special characteristics of Institution A. Institution A, the oldest of the three, serves deaf students exclusively. Evidence of hearing loss is required for entry. Many of the personnel are themselves deaf. It is a 4 year liberal arts college with a trial period of several months to a year between the date at which a student is provisionally admitted and that at which he is fully matriculated. Since this period is of an indefinite length and has varied somewhat over the years we have used the date of admission rather than the date of matriculation as determining length of stay in sample determination and in calculating persistence.

The number applying to Institution A far exceeds the number finally matriculated. For example in the fall of 1979 the total enrollment was 1680 over all classes. Of 1076 applying for admission in that year, 515 (48%) were provisionally accepted; however, only 282 students enrolled and of these only 159 (56%) performed satisfactorily and were matriculated. A table of admissions flow for the years of data collection follows:

College Year	Applied	Accepted	Enrolled
1977	1201	616	354
1978	1168	570	336
1979	1076	515	282
1980	1134	507	297
1981	960	484	294
1982	993	491	311
1983	1419	744	430

What are the criteria used in selection for admission at College A? The chief criteria, as explained by admissions personnel, are high school grade point average, a personal interview and the college's own achievement exam. However, the SAT is considered in some cases. Any applicant to the undergraduate program must have a hearing disability--an audiogram test is required.

Although Institution A does not require the SAT, many candidates applying to it report their scores to it anyhow. In 1977, 44 reported the SAT; in 1978, 67; in 1979, 79; in 1980, 75; in 1981, 77; in 1982, 100; in 1983, 87. Most of these students, however, matriculated elsewhere. Only 48 who had taken the SAT were found in the 10 years of data on matriculates through the spring of 1983. Data was collected from School A for enrollees through the spring of 1983.

2. Steps used in procuring the sample from Institution A.

   a. After granting us permission to use their data, Institution A sent us in the summer of 1983 a computer tape identifying all those on their files as having been enrolled for the previous 10 years, 2780 names in all, with accompanying sex and birthdate. This file then contained enrollees through the 1982-83 school year.

   b. This file was then matched for each year, 1977-1983 inclusive, against the SRS student report file previously discussed. The total number of cases found was 51. An attempt was also made to match the College Board current

direct access files. Three of the 51 cases, although registering to take the SAT, and thus on the file, had not taken it; the final sample was then 48 cases with the SAT.

c. The resulting file of 48 cases was then listed in alphabetical order by year of SAT.

A data-gathering trip was later made to Institution A to enter the following variables supplied by the institution: freshman GPA, cumulative GPA, major field, date entered, date left and reason for leaving. Furthermore, a personal examination of cumulative records of these students revealed information on high school GPA, high school type (residential, day school, mainstreamed public school, etc.), major field, data of entry & leaving, occupation of father and mother, age of onset of deafness and hearing loss in decibels for each year.

Since major field, entry date, etc., were obtained in more than one way, the data from the list supplied by the institutions (which was probably more nearly current) took precedence. However, in some cases both lists were used to determine semesters of attendance, for instance. The following variables were considered too difficult to code reliably for this study without considerable additional research: major field and high school type. Major field had two further disadvantages: (1) since it was listed for the college, not the high school years and since the criteria were success in the first year of college, criterion

contamination was a distinct possibility; (2) many of the students changed major in college once or more.

d. Following the merging of data acquired in the first trip to Institution A in June of 1984, a second trip was made in November to the Department of Audiology at Institution A. The reason for this trip was new information showing that the data on hearing characteristics supplied by the cumulative records was unreliable. For instance, amount of hearing loss was measured in many different ways by various doctors, etc. prior to admission. In contrast, each student is given, soon after admission, an audiology exam by Institution A itself through the Department of Audiology. These later measurements are all on the same scale; hopefully, age of onset of deafness is more carefully recorded also, with additional opportunities to investigate beyond the data recorded in the cumulative record (taken from the student's application).

A further benefit of this visit was the acquisition of other variables related to hearing loss. The full set of hearing related variables then included: (1) age of onset of deafness, (2) hearing loss in each ear in decibels, (3) a 1-5 scale of hearing loss related to spoken conversation both with and without a hearing aid, (4) lipreading with and without cues (based on the John Tracey Test of Lipreading forms A and B) and translated to a 1-5 scale and (5) a test of speech understandability (based on the pooled judgments

of 5 undergraduate teachers), also on a 1-5 scale. Only audiological data from this improved source was used for the final file.

e. To the above collated data was added a persistence score as follows: "1" if the individual persisted through 2 college years of study, regardless of later status, "0" if he dropped out for any reason and did not reenter during 2 consecutive years and "blank" if he entered too near the end of the data collection for his persistence to be determined.

f. The final file as outlined in steps a.-e. was used in the analysis; however, 3 further cases were dropped because of unavailable or missing first year average, giving a final sample of 45 cases.

C. Data collection from Institution B.

1. Special characteristics of Institution B. College B, one of a group of colleges, most of which are for hearing students, is a relatively new institution and so is the college complex of which it is a part. All the associated colleges are geared more to technical and vocational training than to liberal arts. College B, like College A of this study, is exclusively for deaf students and a primary aim is to train its students so that they can find suitable jobs on graduation. Its record in this respect is outstanding; over 90% of the deaf graduates are employed within 1 year of graduation. Although College B has a diploma or associates degree program only, many of the

students (about 15 percent in 1982), get bachelor's or master's degrees through cross-registration to one of the colleges for the hearing on the same campus. A table of admissions flow for the years of data collection follows:

College Year	Applied	Accepted	Enrolled
1977	621	458	358
1978	601	420	321
1979	617	450	353
1980	692	469	363
1981	687	450	372
1982	654	479	388
1983	1027	759	611

As in the case of College A there is a preparation period (only a semester, usually) before actual college work begins. However, again, since this period is somewhat indefinite in length we have used the original date of entry to the college (including the preparatory time) as a base for determining persistence. It should also be noted that some students transfer to College B from College A.

What are the criteria used in the admission of students to College B? The chief criteria, as explained by the head of one of the evaluation departments, are high school grade point average, a personal interview and Stanford Achievement Test scores in reading and mathematics. The SAT was used at one time but was not found to be a very good predictor for the curriculum usually followed. Nevertheless, 206 enrollees who had taken the SAT were found in this college's files, past and present.

Although Institution B does not require the SAT, some of the colleges with which it is associated do require it. Deaf students quite often cross-register into these other colleges. In 1977, 5431 reported scores to the total complex of colleges associated with Institution B; in 1978, 5945 reported; in 1979, 6275 reported; in 1980, 6995 reported; in 1981, 7660 reported scores; in 1982, 7857 reported; and in 1983, 7558 reported.

2. Steps used in processing the sample from Institution B.

   a. Institution B was the earliest institution to give us access to their data. In the spring of 1983 we received a tape containing 2560 cases, identified only by social security numbers.

   b. From this tape the College Board was able to locate 174 cases with SAT scores. Some of these were score-reporters but others were found only on the general SAT file previously mentioned.

   c. The social security numbers of these 174 cases were sent to College B for further information on cumulative GPA, education and income level of parents, deafness characteristics, quarter and calendar year of admission, major field and high school type (as with College A). Again, because of the complexity and variety of major fields and high school type as coded, these last two variables were not used in the present study. Two further measures provided and related to the College GPA in this study were Stanford Achievement total score (a grade equivalent), derived from

subtests in reading, language and mathematics. (This test is used by College B as an important admissions criterion.) A grade equivalent score on the California Reading Test (administered to all freshmen) was also provided by Institution B.

d. To supplement the original sample a second set of 3665 cases was provided (this list updated the original 2560 cases, to include those who had entered College B up through the third quarter of 1983 and went back to the earliest records of College B, years previous). This list (which included name, sex and date of birth plus social security number for ease of matching) was matched with the report (SRS) file for each year of taking the SAT (1977-1983); 48 further matches were found.

e. This list of added matches was again returned to the institution for detailed information. After consolidation the total file contained 222 cases. Persistence was calculated, using quarter of entry and quarter of leaving if any. The 222 cases was further reduced to a final 206, since 16 had not taken the SAT although they were registered for it.

D. Data collection from Institution C.

1. Special characteristics of Institution C. College C was chosen for this study for three reasons: (a) this institution, like Colleges A and B, has a relatively large concentration of deaf students, partly because of its National Center on Deafness,

among its far larger group of hearing students, (b) it has a regular 4 year college curriculum, (c) unlike Institution A or Institution B, in College C deaf students attend classes with hearing students, have the same subjects and have the same grading standards (deaf students are, however, provided support services such as interpreters and note-takers in classes). For these reasons the institution is an ideal place to compare prediction equations for college success for both hearing students and those with hearing impairments.

College C, like College A, is a 4 year college with a liberal arts curriculum. Its chief criteria for admission are test scores (ACT more often than SAT) and high school grade point average as rescaled from high school reports by the college itself. A table of admissions for College C follows (only numbers for the fall of each year are given; those for the spring are far smaller):

College Year	Applied	Accepted	Enrolled
Fall, 1977	17,557	13,703	10,089
Fall, 1978	17,938	13,851	9,876
Fall, 1979	18,528	14,026	10,148
Fall, 1980	17,127	12,624	8,796
Fall, 1981	15,805	11,803	8,261
Fall, 1982	17,496	12,817	8,582
Fall, 1983	16,422	11,999	8,044

In College C there is no preparatory period as in College A and B. All students who enroll, including those with a disability, are enrolled with the same status. Although

a few hearing-impaired enrollees are transfer students, all who have been so labeled are eliminated from the analyses in this study. A further check was made to eliminate duplicates from College A, B and C in the persistence analyses.

For the years 1977, 1978, 1979 and 1980 this college has participated in the ETS validity study service (furnishing ETS with first year averages of their SAT-takers); either the ACT, the test of the American College Testing Program, or the SAT may be required for admission, but tests are not counted for those with a high school grade point average that exceeds 3.2. The number taking the SAT who have reported scores to Institution C are as follows: 6904 cases for 1977, 7437 for 1978, 6946 for 1979, 7058 for 1980, 6858 for 1981, 7428 for 1982, and 7604 for 1983.

2. Explanation of samples for Institution C. For Institution C, unlike the cases of Institutions A and B, three distinct sources of data were used, although sometimes combined in the analyses. The first source was the dataset used in the earlier study of Institution C already cited (Ragosta and Jones, 1981). They selected about 60 deaf and 120 hearing students from a much larger file provided by Institution C for the college years 1970-1971 through 1979-80. For each of these 9 years separately, the nonhandicapped sample had been randomly selected on the basis of 2 hearing for 1 handicapped from a much larger pool of hearing cohorts. The intention was to match the handicapped and non-handicapped cohorts to sharpen the comparison by eliminating the year-of-study effect.

The second sample was formed from all the deaf students registered with the National Center on Deafness for the 4 years 1980-81 through 1983-84: 327 cases in all. From this group about 96 cases were found having SAT scores and first year average; some of these were transfer students.

A much larger third sample based on the entire freshman enrollment at Institution C and almost entirely hearing, was formed from the Validity Study Service score report files of the College Board for the years 1978 (1533 cases), 1979 (1359 cases) and 1980 (1271 cases). These files record a first year average for each student. At a later stage any students found both in this and the deaf samples were eliminated from this file, which counted then as a second nonhandicapped sample. The SAT test-takers in this file would presumably go to college later that year (nationwide 82% of SAT-takers, on average, take the SAT in their senior year). Thus we have the college years 1979-1981 for this control sample. For the more recent handicapped sample we have the college years 1980-1983. Although the difference in time frame may be slightly disadvantageous for comparison analyses, the large sample size is an advantage. Nearly all the analyses pool all those who report scores; i.e., a subset of both the earlier and later handicapped samples, covering the college years 1970-1983 vs. the non-handicapped--which includes some in the years 1970-1979 plus those in the years 1979-1981. In the overall picture the time span for the contrasted groups is roughly comparable.

3. Steps in processing samples.

a. From the Ragosta and Jones database, just described, of 1832 handicapped and nonhandicapped cases, a file of 70 handicapped and 147 nonhandicapped individuals was extracted. Only those were selected who (a) took the SAT, (b) had a first year average, and (c) were not transfer students. (In the previous study high school grade point average was required in some analyses; this was not the case in the present study.) A careful check was made to eliminate duplicates due to overlap with the second and third samples (the "new" case or that with a score report was the one retained).

b. The recent sample of the handicapped was processed to eliminate a few transfer students and a few without first year average.

c. The large nonhandicapped sample from the College Board files was reduced slightly because of duplicates with the handicapped (the nonhandicapped case was eliminated).

d. A table showing the final counts for the different samples follows:

Table III-1

Sample Delineation for School C
by Year of College Entry

	Handicapped			Nonhandicapped		
	Years of Entry		Total	Years of Entry		Total
	1970-79	1980-83		1970-79	1978-80	
On score-report file	10	58	68	37	4023	4060
Not on score-report file	60	22	82	110	0	110
Total	70	80	150	147	4023	4170

Chapter IV

Predicting College Grade Point Average Within Institution

A primary aim of this study is to discover the best predictors of college grade point average within each institution, given the data discussed in Chapter III. This chapter addresses the following questions:

(1) Which individual variables within each institution are significantly correlated with freshman grade point average (or its surrogate, cumulative grade point average, for Institution B)?

(2) Which groups of variables significantly predict college grade point average? The groups are defined as: (a) SAT-V and SAT-M, (b) SAT-V, SAT-M plus high school grade point average, (c) the set of SDQ responses, (d) demographic variables, and (e) variables related to deafness.

The chapter begins with a description of the predictors common to all schools. Following this, for each school separately, tables of intercorrelations are provided and significant validities discussed. Finally, ensuing tables of regression results for each of the 5 sets of predictors mentioned, are given. A few variables unique to each college are also considered.

A. Description of the predictors

1. SAT-V, SAT-M, TSWE and H.S.G.P.A.

a. SAT-V and SAT-M. As mentioned earlier the verbal (SAT-V) and quantitative (SAT-M) scores of the Scholastic Aptitude Test of the College Board were required in all data samples,

both because they have proved good predictors in many previous studies and because they are common across schools. Both scores have been equated continuously over the entire period of data collection. The theoretical range for both is 20-80 (as given on ETS score files but usually multiplied by 10 in this study and in reporting to individuals). Nationally, the mean SAT-V for all test takers during the years 1970-1983 of this study, has ranged (on the 200-800 scale) from a high of 460 in 1970 to a low of 424 in 1980 and 1981 and back to a high of 425 in 1983. The scores have tended to stop their decline over the past 3 years. In the same way, the SAT-M has ranged from 488 in 1970 to a low of 466 in 1980 and 1981 and back to 468 in 1983. As can be seen from Table 1 in Section B of this chapter the mean SAT-V score for all the handicapped of the study is 309 and the mean SAT-M score is 395, 115 and 71 points lower, respectively, than the corresponding lowest national scores.

b. H.S.G.P.A. The high school grade point average of this study is a weighted average of the candidates' responses to the following questions from the Student Descriptive Questionnaire: SDQ#6-11 (no. of years of study in English, mathematics, foreign languages, biological sciences, physical sciences and social sciences) and SDQ#12-17 (self-reported latest year-end or midyear grade in each of the areas of SDQ questions 6-11). If the area was not

included in the student's program of study or if the student failed to respond to one of these questions, the average is adjusted according to the number of responses. The final H.S.G.P.A. arrived at by this method varies from 0 (or F) to 4 (or A), a scale similar to that used in many high schools and colleges.

c. T.S.W.E. The Test of Standard Written English was added to the College Board SAT-V and SAT-M as an additional predictor in 1975. It is reported on a scale of 20-60. The overall mean score on the entire handicapped group in this study is 29.6, compared to values between 42 and 43 for the entire U.S. population in the years of the study.

2. S.D.Q. variables. The Student Descriptive Questionnaire (SDQ) predictors used in the study are briefly described in the following list, which is derived from the study by Wilson (1978) mentioned in Chapter II. The variables in the present study are divided into non-cognitive and cognitive groups, just as in the earlier study. However, the following variables in the earlier lists were not used: family income level (not available for many cases on our file), musical ability (not appropriate for the deaf), and "presented CEEB achievements" (omitted since relatively few of the deaf take the College Board achievement tests). SDQ#24 (education level sought) has retained all levels of aspiration unlike the earlier dichotomy (degree sought/not sought).

The list used in this study (with corresponding ranges) are presented in Table 2. This table may be referred to for interpretation of some of the computer analyses where only the SDQ no. is given because of an 8-character name limitation in SPSS and other computer programs.

Table IV-1

SDQ Variables Used in Regression and Other Analyses

Variable		Scale* (High-Low)
Noncognitive List		
SDQ #4:	Size of high school class	(1-5)
SDQ #20:	Participation in community or church groups in high school	(1-5)
SDQ #21:	Participation in athletics in high school	(1-5)
SDQ #22:	Participation in clubs and organizations in high school	(1-5)
SDQ #24:	Highest level of education you plan to complete beyond high school ("other" or "undecided coded 1)	(1-5)
SDQ #44(A)	Number of areas outside regular course work in which assistance is desired in college	(1-8)
SDQ #45(A)	Number of activities participated in high school (athletics, journalism, art, preprofessional, religious, etc.)	(1-8)
SDQ #46(A)	Number of activities planned to participate in in college (same list as in SDQ #45)	(1-8)
SDQ #47:	Self-rating on acting ability compared with others	(1-5)
SDQ #48:	Self-rating on artistic ability	(1-5)
SDQ #49:	Self-rating on athletic ability	(1-5)
SDQ #51:	Self-rating on "getting along with others"	(1-5)
SDQ #52:	Self-rating on leadership ability	(1-5)
SDQ #54:	Self-rating on mechanical ability	(1-5)
SDQ #57:	Self-rating on sales ability	(1-5)
Cognitive List		
SDQ #5:	Class rank in high school (reversed for analysis so that highest rank receives highest value)	(1-6)
SDQ #12:	(using #12-17) Number of subject areas in high school (English, mathematics, foreign languages, biological sciences, physical sciences, social studies) in which A grades were reported	(1-6)
SDQ #12H:	(Using #12-17) Number of above subjects taken as honors, advanced or accelerated courses	(1-6)
SDQ #18(A)	Number of advanced placement courses completed prior to college (fields are English, mathematics, foreign languages, biological sciences, physical sciences, social studies, art/music)	(1-7)
SDQ #23:	Number of honors or awards (primarily academic such as in debating society, etc.), received in high school	(1-5)
SDQ #50:	Self-reported ability (as compared with others) in creative writing	(1-5)
SDQ #53:	Self-reported ability in mathematis	(1-5)
SDQ #56:	Self-reported ability in organizing work	(1-5)
SDQ #58:	Self-reported ability in science	(1-5)
SDQ #59:	Self-reported abiltiy in spoken expression	(1-5)
SDQ #60:	Self-reported ability in written expression	(1-5)

3. Demographic variables. The demographic variables used for all schools were: sex, race and age in years. Sex was designated: male=1, female=2. Race was coded: White=1, all others=0; in the analyses using Institution C those who were neither Hispanic nor Black were also included with Whites in one subset of the data. For sex, recoded as 0,1 in the introductory table, the mean becomes the proportion of women; for race, it is the proportion of Whites. The age variable was based on the years elapsed between birth and the time of taking the SAT.

4. Variables related to deafness.

   a. Age of onset of deafness. This variable, one of two supplied by each school and on a common scale, was the age in years in which deafness was first recognized. A large majority of students lost their hearing at birth (0 years). For Institution B this value was assigned as a default. In each school there was some missing data.

   b. Hearing loss variable. The hearing loss variable, although measured in decibels in all schools, was skewed at the high end (since many students' loss in both ears was greater than 110 decibels); furthermore, in such cases, some schools assigned an asymptotic value of 110 decibels (db) and others 120 db. Furthermore, hearing loss may be measured with/without a hearing aid and, in any case, does not necessarily correspond to loss of speech understanding.

      For this reason, the second variable related to deafness characteristics was coded only 0 or 1, using a

scheme suggested by Institution C. In this method hearing loss less than 60 db. in the better ear was coded "1" ("hard of hearing") vs. loss greater than 60 db ("deaf") which was coded "0". Thus the mean of this variable is the proportion of those who are only mildly deaf.

c. Speech comprehension. A speech understanding measure, coded 1-5 and given by two schools, is used within these schools. For institution A, which has a complete department of audiology, several more refined variables related to deafness were included.

B. Comparative tabulations of measures common to all schools.

1. Introduction. Table IV-2, gives counts, means, standard deviations and ranges for all variables described in Section A by school. For some of the SDQ questions the N's are somewhat depleted. For School B the N for the age variable is quite low since in many cases the year of taking the SAT was not available. For School C the SAT scores, SDQ responses, the H.S.G.P.A. computed from them, TSWE, hearing loss and age variables were available only for those who had reported scores (and thus were on the College Board report files by year of taking the SAT). The maximum N's for the 3 schools are: School A: 44, School B: 203, School C: 150. These N's are slightly lower than those reported in Chapter III because of 4 students who were on more than one school roster and were eliminated in this comparative table.

TABLE IV-2

COMPARATIVE STATISTICS BY SCHOOL

	SCHOOL A					SCHOOL B					SCHOOL C				
	N	MEAN	S.D.(N-1)	MIN	MAX	N	MEAN	S.D.(N-1)	MIN	MAX	N	MEAN	S.D.(N-1)	MIN	MAX
SDQ#4:	40	3.02	1.25	1.00	5.00	162	3.14	1.39	1.00	5.00	64	3.00	1.40	1.00	5.00
SDQ#20:	41	2.49	1.38	1.00	5.00	159	2.47	1.28	1.00	5.00	62	2.39	1.36	1.00	5.00
SDQ#21:	40	2.75	1.43	1.00	5.00	162	2.88	1.47	1.00	5.00	64	3.00	1.52	1.00	5.00
SDQ#22:	41	2.27	1.05	1.00	4.00	165	1.87	0.87	1.00	5.00	62	2.44	1.11	1.00	5.00
SDQ#24:	39	4.36	1.51	1.00	6.00	163	3.57	1.47	1.00	6.00	62	4.21	1.28	1.00	6.00
SDQ#44A:	41	2.27	1.63	0.0	6.00	166	2.40	1.99	0.0	8.00	66	2.17	1.81	0.0	8.00
SDQ#45A:	41	2.39	1.66	0.0	6.00	166	1.93	1.40	0.0	6.00	66	2.26	1.49	0.0	6.00
SDQ#46A:	41	2.29	1.62	0.0	5.00	166	1.86	1.46	0.0	6.00	66	1.95	1.40	0.0	5.00
SDQ#47:	41	2.71	0.93	1.00	5.00	158	2.36	1.03	1.00	5.00	62	2.53	1.05	1.00	5.00
SDQ#48:	41	2.73	1.10	1.00	5.00	158	2.80	1.18	1.00	5.00	64	2.63	1.16	1.00	5.00
SDQ#49:	41	2.54	0.98	1.00	5.00	158	3.13	1.11	1.00	5.00	64	3.23	1.21	1.00	5.00
SDQ#51:	41	3.51	1.03	2.00	5.00	157	3.48	1.02	1.00	5.00	65	3.40	1.16	1.00	5.00
SDQ#52:	41	2.85	1.15	1.00	5.00	158	2.71	1.05	1.00	5.00	64	2.84	1.12	1.00	5.00
SDQ#54:	41	1.80	0.87	1.00	4.00	157	2.52	1.09	1.00	5.00	64	2.03	1.14	1.00	5.00
SDQ#57:	41	2.10	0.97	1.00	5.00	156	2.29	0.96	1.00	5.00	63	2.14	1.01	1.00	5.00
SDQ#5:	39	4.33	1.42	1.00	6.00	146	3.93	1.25	1.00	6.00	60	4.33	1.31	1.00	6.00
SDQ#12:	41	1.56	1.48	0.0	6.00	166	1.02	1.31	0.0	6.00	66	1.52	1.51	0.0	5.00
SDQ#12H:	41	0.24	0.66	0.0	3.00	166	0.18	0.65	0.0	5.00	66	0.09	0.42	0.0	3.00
SDQ#18A:	41	0.54	0.92	0.0	4.00	166	0.70	1.08	0.0	5.00	66	0.41	0.76	0.0	5.00
SDQ#23:	40	2.00	1.18	1.00	5.00	165	1.73	0.99	1.00	5.00	63	2.14	1.29	1.00	5.00
SDQ#50:	41	2.88	1.14	1.00	5.00	158	2.39	1.06	1.00	5.00	64	2.48	0.94	1.00	5.00
SDQ#53:	41	2.66	1.11	1.00	5.00	158	3.13	1.11	1.00	5.00	64	3.08	1.15	1.00	5.00
SDQ#56:	41	3.22	1.15	1.00	5.00	156	3.11	0.97	1.00	5.00	64	3.03	1.08	1.00	5.00
SDQ#58:	41	2.41	1.00	1.00	5.00	156	2.58	1.10	1.00	5.00	64	2.61	1.09	1.00	5.00
SDQ#59:	40	2.35	1.03	1.00	5.00	157	2.36	1.06	1.00	5.00	65	2.49	1.03	1.00	5.00
SDQ#60:	41	3.05	1.18	1.00	5.00	156	2.53	1.06	1.00	5.00	64	2.77	1.14	1.00	5.00
H.S.GPA	39	3.05	0.58	1.62	4.00	158	2.83	0.59	1.19	4.00	63	3.04	0.52	2.00	4.00
SAT-V	44	330.00	135.10	200.00	670.00	203	288.70	97.10	200.00	65.00	150	330.40	113.10	200.00	760.00
SAT-M	44	379.50	90.30	220.00	620.00	203	384.20	101.70	220.00	71.00	150	413.70	105.00	220.00	740.00
TSWE SCORE	44	34.00	12.97	20.00	60.00	201	28.15	9.56	20.00	58.00	69	30.86	10.90	20.00	59.00
AGE	44	18.68	0.93	16.00	20.00	41	18.88	1.47	12.00	22.00	68	19.09	4.72	17.00	57.00
SEX	44	0.75	0.44	0.0	1.00	203	0.43	0.50	0.0	1.00	150	0.59	0.49	0.0	1.00
RACE	40	0.82	0.38	0.0	1.00	163	0.91	0.28	0.0	1.00	137	0.88	0.33	0.0	1.00
ONSET	43	1.19	2.97	0.0	16.00	199	0.50	1.70	0.0	14.00	140	1.19	2.97	0.0	18.00
F.Y.GPA*	44	2.63	0.90	0.55	4.00	203	2.67	0.67	0.14	4.00	150	2.43	0.59	1.06	3.78
HEARING(0-1)	43	0.12	0.32	0.0	1.00	203	0.01	0.12	0.0	1.00	70	0.04	0.20	0.0	1.00

TABLE IV-2 (CONTINUED)

COMPARATIVE STATISTICS BY SCHOOL

ALL SCHOOLS *

	N	MEAN	S.D.(N-1)	MIN	MAX
SDQ#4:	266	3.09	1.37	1.00	5.00
SDQ#20:	262	2.45	1.31	1.00	5.00
SDQ#21:	266	2.89	1.47	1.00	5.00
SDQ#22:	268	2.06	0.98	1.00	5.00
SDQ#24:	264	3.84	1.47	1.00	6.00
SDQ#44A:	273	2.32	1.89	0.0	8.00
SDQ#45A:	273	2.08	1.47	0.0	6.00
SDQ#46A:	273	1.95	1.47	0.0	6.00
SDQ#47:	261	2.46	1.02	1.00	5.00
SDQ#48:	263	2.75	1.16	1.00	5.00
SDQ#49:	263	3.06	1.13	1.00	5.00
SDQ#51:	263	3.46	1.05	1.00	5.00
SDQ#52:	263	2.76	1.08	1.00	5.00
SDQ#54:	262	2.29	1.11	1.00	5.00
SDQ#57:	260	2.22	0.97	1.00	5.00
SDQ#5:	245	4.09	1.30	1.00	6.00
SDQ#12:	273	1.22	1.40	0.0	6.00
SDQ#12H:	273	0.17	0.61	0.0	5.00
SDQ#18A:	273	0.60	0.99	0.0	5.00
SDQ#23:	268	1.87	1.11	1.00	5.00
SDQ#50:	263	2.49	1.06	1.00	5.00
SDQ#53:	263	3.05	1.13	1.00	5.00
SDQ#56:	261	3.11	1.02	1.00	5.00
SDQ#58:	261	2.56	1.08	1.00	5.00
SDQ#59:	262	2.39	1.04	1.00	5.00
SDQ#60:	261	2.67	1.11	1.00	5.00
H.S.GPA	260	2.91	0.58	1.19	4.00
SAT-V	397	309.00	109.70	200.00	760.00
SAT-M	397	394.80	102.60	220.00	740.00
TSWE SCORE	314	29.57	10.57	20.00	60.00
AGE	153	18.92	3.26	12.00	57.00
SEX	397	0.52	0.50	0.0	1.00
RACE	340	0.89	0.32	0.0	1.00
ONSET	382	0.83	2.41	0.0	18.00
F.Y.GPA*	397	2.57	0.68	0.14	4.00
HEARING(0-1)	316	0.03	0.18	0.0	1.00

2. Results

a. Comparison of statistics on the SAT, TSWE, HSGPA. For the SAT-V the means for Schools A and C are almost identical. School B's mean is lower. The standard deviation is also smaller for School B. Similar to the statistics for the general population, SAT-M means are higher than SAT-V means for hearing impaired students at all three schools. The differences between SAT-V and SAT-M is highest for School B, but by itself is highest for School C. The standard deviations for SAT-M on all 3 schools are 90-105 units.

The TSWE (Test of Standard Written English) score is related to language proficiency, one of the most difficult areas for the deaf. Consequently, it is not surprising that the scores (on a 20 to 60 scale) are lower for two of the three schools, than for the SAT-V or SAT-M. School A with a mean of 34.0 is followed by School C (mean = 30.9), with School B at 28.2. High school grade point average (H.S.G.P.A.) is on the same scale for the 3 schools, since it is calculated from the SDQ responses. Schools A and C report an average of about 3.05; for School B it is 2.83; the standard deviations are similar.

b. Comparison of statistics on SDQ responses. The values in the tables may be consulted. However, the total of the means for the academic set (indicating higher performance or more participating) are in order: School A: 2.29, School B: 2.15, School C: 2.27. The means for the nonacademic

set are: School A: 2.67, School B: 2.63, School C: 2.68. Although all 3 schools seem equivalent in terms of students' participation in nonacademic affairs, schools A and C stand out on the academic set.

c. Comparison of statistics on demographic characteristics. The mean ages in years for the 3 schools are very similar, about 19 years old, at the time of taking the SAT. For SAT-takers in the United States population as a whole for the 88% who take the SAT in their senior year the figure is about 17 years of age. Consequently, it may be inferred the deaf college-attending group are slightly behind their hearing counterparts. The sex variable indicates that 75% of those in the study are women at College A, 43% at College B and 59% at College C. Racially, the proportions of minorities in these samples is highest at Gallaudet (18%) followed by College C (12%), followed by College B (9%).

d. Comparison of characteristics related to deafness. The average age of onset of deafness is about a year for Schools A and C but closer to 6 months for School B. The proportion of those with hearing loss greater than 60 decibels is also the largest (99%) in School B in this study compared to School A (88%) and School C (96%).

C. Validities and regressions for School A.

1. Introductory remarks. Preparatory to the within-school regressions described in this section (and sections D and E of this

chapter), missing data correlations were performed for all variables according to the procedure discussed in Chapter II. The N of these results is then the maximum N of the sample; the means are arrived at by substituting the mean of the cases present for the missing data cases; the standard deviations and convariences are obtained by using the variances and covariances corresponding to the largest N present for each variable or pair of variables.

In the following tables validities of the first year average from each prediction are given (with a notation for those which are significant). A table of intercorrelations is given in Table IV-3. A corresponding table of N's, means and sigmas is given in Appendix B. Regressions, based on a reconstructed cross products matrix from the missing data, were then performed for each of the 4 types of variable discussed in Section B. The variable TSWE is omitted from these regressions; however, it is closely related to the SAT-V. An overall multiple R, F test, degrees of freedom and associated probability for the relationship of each of the sets of predictors with FYA is later provided.

The sets used in the analyses for Institution A are as follows:

(1) Set 1 (comprising the main score variables) is given in two forms: (a) SAT scores alone and (b) SAT scores with HSGPA as calculated from SDQ responses.

(2) Set 2 contains only the SDQ questions described above.

TABLE IV-3

INTERCORRELATIONS OF VARIABLES
USED IN WITHIN-SCHOOL REGRESSIONS - SCHOOL A

	SDQ84:	SDQ820:	SDQ821:	SDQ822:	SDQ824:	SDQ844A:	SDQ845A:	SDQ846A:	SDQ847:	SDQ848:	SDQ849:	SDQ851
SDQ84:	1.0000	0.1910	-0.2671	-0.3234	-0.0884	-0.2869	-0.2663	0.0667	-0.1541	-0.1838	-0.0281	-0.085
SDQ820:	0.1910	1.0000	-0.1584	-0.1471	0.3323	-0.0813	0.2010	0.2218	0.0371	0.2500	-0.1576	0.191
SDQ821:	-0.2671	-0.1584	1.0000	0.5129	-0.1701	-0.2068	0.4741	0.2649	0.2511	-0.2411	0.5068	-0.036
SDQ822:	-0.3234	-0.1471	0.5129	1.0000	0.0445	0.1217	0.6718	0.3224	0.2709	-0.1001	0.2199	0.057
SDQ824:	-0.0884	0.3323	-0.1701	0.0445	1.0000	0.2904	0.2607	0.1812	-0.2422	-0.0104	-0.0971	-0.032
SDQ844A:	-0.2869	-0.0813	-0.2068	0.1217	0.2904	1.0000	0.2181	0.1729	-0.1428	0.1172	0.0480	0.263
SDQ845A:	-0.2663	0.2010	0.4741	0.6718	0.2607	0.2181	1.0000	0.6947	0.0269	0.1915	0.2634	0.167
SDQ846A:	0.0667	0.2218	0.2649	0.3224	0.1812	0.1729	0.6947	1.0000	-0.1558	0.0520	0.2241	0.137
SDQ847:	-0.1541	0.0371	0.2511	0.2709	-0.2422	-0.1428	0.0269	-0.1558	1.0000	0.1398	0.0599	0.223
SDQ848:	-0.1838	0.2500	-0.2411	-0.1001	-0.0104	0.1172	0.1915	0.0520	0.1398	1.0000	0.0872	0.160
SDQ849:	-0.0281	-0.1576	0.5068	0.2199	-0.0971	0.0480	0.2634	0.2241	0.0599	0.0872	1.0000	0.034
SDQ851:	-0.0857	0.1914	-0.0360	0.0571	-0.0328	0.2633	0.1676	0.1376	0.2237	0.1604	0.0345	1.000
SDQ852:	-0.2748	0.0420	0.3409	0.3446	-0.0646	0.0361	0.3440	0.1721	0.3293	0.0450	0.2470	0.487
SDQ854:	-0.1144	-0.0367	-0.0033	0.1567	0.0356	0.1717	0.1673	0.1586	0.0639	0.1017	0.3072	-0.145
SDQ857:	-0.1577	0.1410	0.1381	0.1201	-0.2792	0.0715	0.0435	0.0701	0.3037	0.0562	0.0545	0.504
SDQ85:	-0.4072	-0.2072	0.4068	0.6345	0.3187	0.2550	0.4857	0.1136	0.0464	-0.0952	0.1135	0.113
SDQ812:	-0.2170	0.0320	0.3406	0.5244	0.2257	-0.0729	0.4502	0.2803	0.1148	0.1231	0.1446	0.079
SDQ812H:	0.0072	0.1742	0.2065	0.3214	0.4166	0.1879	0.4882	0.4628	0.0245	-0.0049	0.0107	0.101
SDQ818A:	-0.2435	0.0971	0.2660	0.2060	0.3332	0.0613	0.2985	0.0697	0.1633	0.0559	0.0383	-0.066
SDQ823:	-0.1606	0.0230	0.5132	0.4031	0.3228	-0.0222	0.3785	0.1672	0.3790	-0.0444	0.0978	0.033
SDQ850:	-0.2078	-0.1263	0.0402	-0.0318	0.0052	-0.1039	0.0221	-0.2501	0.1353	0.1736	-0.1875	0.043
SDQ853:	-0.2670	0.1563	0.3732	0.4757	0.1466	0.0233	0.4966	0.2054	0.2469	0.2067	0.4287	0.103
SDQ856:	-0.0133	0.2541	0.1010	0.2605	0.1017	-0.1172	0.1767	0.1720	0.2640	-0.1204	0.0492	0.497
SDQ858:	-0.2517	0.1220	-0.1636	0.2199	0.2914	0.0894	0.2867	0.0989	0.1498	0.3649	-0.0319	-0.034
SDQ859:	-0.1093	0.1765	0.1896	0.2023	0.1503	0.2351	0.2281	-0.0158	0.3265	0.0718	0.1677	0.382
SDQ860:	-0.3116	-0.0803	0.0447	0.0741	0.2169	0.1689	0.1843	-0.1027	0.1719	0.1306	-0.1613	0.151
H.S.GPA	-0.3871	-0.0124	0.3940	0.5396	0.3711	-0.0179	0.5498	0.3901	0.0839	0.1754	0.2293	0.134
SAT-V	-0.0103	-0.0316	0.2335	0.1800	0.2882	-0.1452	0.2505	0.2117	-0.1031	0.0273	0.0196	-0.442
SAT-M	-0.2386	-0.0409	0.1813	0.3141	0.3688	0.0298	0.3048	0.1048	-0.2251	0.1202	0.0431	-0.384
TSWE SCORE	0.1093	0.0441	0.0458	0.0545	0.2552	-0.1183	0.1199	0.0412	-0.0845	-0.0066	-0.1626	-0.363
AGE	-0.0493	0.2419	0.0164	0.0234	-0.2017	0.0209	-0.0565	-0.0712	0.0020	-0.1991	-0.0641	0.201
SEX	0.4693	0.0937	-0.1248	-0.2860	0.0009	0.0473	0.0691	0.3572	-0.1218	0.0280	0.0999	0.277
RACE	-0.1146	-0.1754	0.1969	0.1342	-0.0854	0.0855	0.1908	0.2356	-0.1374	0.0151	0.1131	-0.339
ED.LEV.	0.1309	0.0566	-0.1120	0.0020	0.1773	-0.1149	0.1906	0.0029	-0.2218	0.3226	0.2297	-0.135
ONSET	0.0812	-0.0311	-0.0180	-0.0131	0.0713	-0.1081	0.1076	-0.0662	-0.3038	0.1546	0.2666	-0.214
HEARING (0-1)	0.2408	0.3833	-0.2910	-0.0679	0.2638	0.2186	-0.0106	0.1542	-0.2202	-0.0879	-0.1920	0.016
HEARING DISC.	0.2785	0.2208	-0.3375	-0.2156	0.1955	0.0750	-0.0663	0.1795	-0.3358	0.0280	-0.2500	-0.210
LIP-READING	0.2006	0.0472	0.0280	-0.0998	0.0342	0.0108	0.0597	0.1326	-0.2075	-0.0189	0.1195	-0.171
SPEECH CLARITY	0.2531	0.1927	-0.1968	-0.2267	0.0354	-0.0122	-0.1179	0.0755	-0.4143	-0.0138	-0.1368	-0.278
H.S.GPA-SCHOOL	-0.1240	0.2566	0.3504	0.3816	0.1834	-0.0290	0.4584	0.1001	0.1498	0.2338	0.1640	0.282
F.Y.GPA*	-0.0183	-0.0575	0.1379	0.4061	0.3306	0.0770	0.2797	0.0610	-0.1284	-0.0282	0.0941	-0.039

TABLE IV-3 (CONTINUED)

INTERCORRELATIONS OF VARIABLES
USED IN WITHIN-SCHOOL REGRESSIONS - SCHOOL A

	SDQ852:	SDQ854:	SDQ857:	SDQ85:	SDQ812:	SDQ812H:	SDQ818A:	SDQ823:	SDQ850:	SDQ853:	SDQ856:	SDQ858:
SDQ84:	-0.2748	-0.1144	-0.1577	-0.4072	-0.2170	0.0072	-0.2435	-0.1606	-0.2078	-0.2670	-0.0133	-0.2517
SDQ820:	0.0420	-0.0367	0.1410	-0.2072	0.0320	0.1742	0.0971	0.0230	-0.1263	0.1563	0.2541	0.1220
SDQ821:	0.3409	-0.0033	0.1381	0.4068	0.3406	0.2065	0.2660	0.5132	0.0402	0.3732	0.1010	-0.1636
SDQ822:	0.3446	0.1567	0.1201	0.6345	0.5244	0.3214	0.2060	0.4031	-0.0318	0.4757	0.2605	0.2199
SDQ824:	-0.0646	0.0356	-0.2792	0.3187	0.2257	0.4166	0.3332	0.3228	0.0052	0.1466	0.1017	0.2914
SDQ844A:	0.0361	0.1717	0.0715	0.2550	-0.0729	0.1879	0.0613	-0.0222	-0.1039	0.0233	-0.1172	0.0894
SDQ845A:	0.3440	0.1673	0.0435	0.4857	0.4502	0.4882	0.2985	0.3785	0.0221	0.4966	0.1767	0.2867
SDQ846A:	0.1721	0.1586	0.0701	0.1136	0.2603	0.4628	0.0697	0.1672	-0.2501	0.2054	0.1720	0.0989
SDQ847:	0.3293	0.0639	0.3037	0.0464	0.1148	0.0245	0.1633	0.3790	0.1353	0.2469	0.2640	0.1498
SDQ848:	0.0450	0.1017	0.0562	-0.0952	0.1231	-0.0049	0.0559	-0.0444	0.1736	0.2067	-0.1204	0.3649
SDQ849:	0.2470	0.3072	0.0545	0.1135	0.1446	0.0107	0.0383	0.0978	-0.1875	0.4287	0.0492	-0.0319
SDQ851:	0.4871	-0.1450	0.5046	0.1135	0.0793	0.1010	-0.0660	0.0332	0.0439	0.1034	0.4979	-0.0345
SDQ852:	1.0000	0.1945	0.4142	0.3267	0.2828	0.0467	0.1669	0.2959	-0.1231	0.5215	0.5326	0.0772
SDQ854:	0.1945	1.0000	0.0810	0.0129	0.1898	-0.0141	0.1711	-0.1715	-0.3308	0.2689	0.0645	0.2513
SDQ857:	0.4142	0.0810	1.0000	-0.0117	0.0344	-0.0458	0.1204	0.1115	-0.0777	0.1028	0.4365	-0.0545
SDQ85:	0.3267	0.0129	-0.0117	1.0000	0.6885	0.3287	0.2072	0.3714	0.2891	0.4148	0.1154	0.2709
SDQ812:	0.2828	0.1898	0.0344	0.6885	1.0000	0.4278	0.2674	0.3753	0.1350	0.4830	0.2309	0.4694
SDQ812H:	0.0467	-0.0141	-0.0458	0.3287	0.4278	1.0000	0.4772	0.3619	-0.0015	0.2034	-0.0449	0.3646
SDQ818A:	0.1669	0.1711	0.1204	0.2072	0.2674	0.4772	1.0000	0.3583	0.0487	0.2340	-0.0288	0.0958
SDQ823:	0.2959	-0.1715	0.1115	0.3714	0.3753	0.3619	0.3583	1.0000	0.0719	0.3587	0.2667	0.0525
SDQ850:	-0.1231	-0.3308	-0.0777	0.2891	0.1350	-0.0015	0.0487	0.0719	1.0000	-0.2532	-0.1128	0.1660
SDQ853:	0.5215	0.2689	0.1028	0.4148	0.4830	0.2034	0.2340	0.3587	-0.2532	1.0000	0.1931	0.3215
SDQ856:	0.5326	0.0645	0.4365	0.1154	0.2309	-0.0449	-0.0288	0.2667	-0.1128	0.1931	1.0000	0.1014
SDQ858:	0.0772	0.2513	-0.0545	0.2709	0.4694	0.3646	0.0958	0.0525	0.1660	0.3215	0.1014	1.0000
SDQ859:	0.3936	0.0464	0.3066	0.2538	0.0648	0.2200	0.1500	0.3963	0.2387	0.1608	0.1260	0.1427
SDQ860:	0.0260	-0.1764	-0.0291	0.3977	0.2267	0.0723	0.0549	0.2698	0.7845	-0.1872	0.1139	0.3285
H.S.GPA	0.3679	-0.0151	0.0327	0.7530	0.7928	0.3844	0.1362	0.4887	0.2318	0.5331	0.2368	0.4194
SAT-V	-0.2878	0.0383	-0.3219	0.2378	0.3572	0.4528	0.2913	0.3448	0.3719	-0.1558	-0.1403	0.2861
SAT-M	-0.1805	0.1459	-0.2395	0.3355	0.4642	0.4981	0.4579	0.3203	0.0762	0.2206	-0.2163	0.3958
TSWE SCORE	-0.3534	-0.0611	-0.2662	0.1942	0.2231	0.4246	0.1811	0.2120	0.4236	-0.2232	-0.1763	0.3170
AGE	0.1116	-0.2227	0.1294	0.0873	-0.1071	-0.2565	-0.2608	-0.1721	-0.1699	0.1022	0.2189	-0.3318
SEX	-0.0803	-0.3632	-0.0866	-0.2733	-0.2107	0.0697	-0.2161	0.0348	-0.0533	-0.2255	-0.0067	-0.3152
RACE	-0.2803	-0.0302	-0.2239	0.0379	0.0540	0.0746	-0.0822	0.0000	-0.0313	-0.0267	-0.3673	0.0643
ED.LEV.	0.0116	0.1780	-0.2224	-0.1507	0.0569	0.1954	0.0702	0.1393	-0.0094	0.2429	-0.1049	0.0675
ONSET	-0.1147	-0.0321	-0.1024	-0.0858	-0.0659	0.0174	0.0402	0.1035	0.0806	0.1389	-0.1993	-0.0963
HEARING (0-1)	-0.2463	-0.0019	-0.0928	-0.0785	-0.0715	0.3478	0.2036	-0.0982	-0.2275	-0.1170	-0.0566	-0.0177
HEARING DISC.	-0.3283	-0.0950	-0.2656	-0.2642	-0.3021	0.2173	0.1409	-0.1327	-0.0972	-0.2676	-0.2503	-0.1600
LIP-READING	-0.3255	0.1004	-0.2822	-0.3833	-0.1684	0.1084	0.0628	-0.0127	-0.0462	-0.2366	-0.1716	-0.1039
SPEECH CLARITY	-0.3152	0.1004	-0.2179	-0.4667	-0.3585	0.0182	0.0642	-0.2300	-0.0711	-0.3182	-0.2388	-0.2017
H.S.GPA-SCHOOL	0.1968	-0.0255	0.0925	0.5078	0.6013	0.2559	0.0398	0.4271	0.4265	0.3511	0.3124	0.3727
F.Y.GPA*	-0.0290	-0.0608	-0.1708	0.5636	0.4215	0.3506	0.2462	0.2093	0.4284	0.0533	0.0523	0.2598

TABLE IV-3 (CONTINUED)

INTERCORRELATIONS OF VARIABLES
USED IN WITHIN-SCHOOL REGRESSIONS - SCHOOL A

	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-M	TSWE SCORE	AGE	SEX	RACE	ED.LEV.	ONSET	HEAR.(0-1)
SDQ#4:	-0.1093	-0.3116	-0.3871	-0.0103	-0.2386	0.1093	-0.0493	0.4693	-0.1146	0.1309	0.0812	0.2408
SDQ#20:	0.1765	-0.0803	-0.0124	-0.0316	-0.0409	0.0441	0.2419	0.0937	-0.1754	0.0566	-0.0311	0.3833
SDQ#21:	0.1896	0.0447	0.3940	0.2335	0.1813	0.0458	0.0164	-0.1248	0.1969	-0.1120	-0.0180	-0.2910
SDQ#22:	0.2023	0.0741	0.5396	0.1800	0.3141	0.0545	0.0234	-0.2860	0.1342	0.0020	-0.0131	-0.0679
SDQ#24:	0.1503	0.2169	0.3711	0.2882	0.3688	0.2552	-0.2017	0.0009	-0.0854	0.1773	0.0713	0.2638
SDQ#44A:	0.2351	0.1689	-0.0179	-0.1452	0.0298	-0.1183	0.0209	0.0473	0.0855	-0.1149	-0.1081	0.2186
SDQ#45A:	0.2281	0.1843	0.5498	0.2505	0.3048	0.1199	-0.0565	0.0691	0.1908	0.1906	0.1076	-0.0106
SDQ#46A:	-0.0158	-0.1027	0.3901	0.2117	0.1048	0.0412	-0.0712	0.3572	0.2356	0.0029	-0.0862	0.1542
SDQ#47:	0.3265	0.1719	0.0839	-0.1031	-0.2251	-0.0845	0.0020	-0.1218	-0.1374	-0.2218	-0.3038	-0.2202
SDQ#48:	0.0718	0.1306	0.1754	0.0273	0.1202	-0.0066	-0.1991	0.0280	0.0151	0.3226	0.1546	-0.0879
SDQ#49:	0.1677	-0.1613	0.2293	0.0196	0.0431	-0.1626	-0.0641	0.0999	0.1131	0.2297	0.2666	-0.1920
SDQ#51:	0.3820	0.1513	0.1340	-0.4423	-0.3846	-0.3634	0.2019	0.2770	-0.3393	-0.1350	-0.2149	0.0167
SDQ#52:	0.3936	0.0260	0.3679	-0.2878	-0.1805	-0.3534	0.1116	-0.0803	-0.2803	0.0116	-0.1147	-0.2463
SDQ#54:	0.0464	-0.1764	-0.0151	0.0383	0.1459	-0.0611	-0.2227	-0.3632	-0.0302	0.1780	-0.0321	-0.0019
SDQ#57:	0.3066	-0.0291	0.0327	-0.3219	-0.2395	-0.2662	0.1294	-0.0866	-0.2239	-0.2224	-0.1024	-0.0928
SDQ#5:	0.2538	0.3977	0.7530	0.2378	0.3355	0.1942	0.0873	-0.2733	0.0379	-0.1507	-0.0858	-0.0785
SDQ#12:	0.0648	0.2267	0.7928	0.3572	0.4642	0.2231	-0.1071	-0.2107	0.0540	0.0569	-0.0659	-0.0715
SDQ#12H:	0.2200	0.0723	0.3844	0.4528	0.4981	0.4246	-0.2565	0.0697	0.0746	0.1954	0.0174	0.3478
SDQ#18A:	0.1500	0.0549	0.1362	0.2913	0.4579	0.1811	-0.2608	-0.2161	-0.0822	0.0702	0.0402	0.2036
SDQ#23:	0.3963	0.2698	0.4887	0.3448	0.3203	0.2120	-0.1721	0.0348	0.0000	0.1393	0.1035	-0.0982
SDQ#50:	0.2387	0.7845	0.2318	0.3719	0.0762	0.4236	-0.1699	-0.0533	-0.0313	-0.0094	0.0806	-0.2275
SDQ#53:	0.1608	-0.1872	0.5331	-0.1558	0.2206	-0.2232	0.1022	-0.2255	-0.0267	0.2429	0.1389	-0.1170
SDQ#56:	0.1260	0.1139	0.2368	-0.1403	-0.2163	-0.1763	0.2189	-0.0067	-0.3673	-0.1049	-0.1993	-0.0566
SDQ#58:	0.1427	0.3285	0.4194	0.2861	0.3958	0.3170	-0.3318	-0.3152	0.0643	0.0675	-0.0963	-0.0177
SDQ#59:	1.0000	0.4549	0.1625	0.1244	-0.0551	0.2056	-0.1498	-0.0377	-0.2870	0.0681	0.0270	-0.0211
SDQ#60:	0.4549	1.0000	0.3103	0.4379	0.1009	0.4780	-0.2207	-0.0065	-0.0174	-0.0947	-0.0660	-0.1877
H.S.GPA	0.1625	0.3103	1.0000	0.3081	0.3413	0.1770	-0.0648	-0.0003	0.1061	0.0653	0.0753	-0.1827
SAT-V	0.1244	0.4379	0.3081	1.0000	0.6750	0.8732	-0.4383	-0.1267	0.3313	0.1396	0.0476	0.0642
SAT-M	-0.0551	0.1009	0.3413	0.6750	1.0000	0.5842	-0.4693	-0.3905	0.3908	0.3406	0.2054	0.0632
TSWE SCORE	0.2056	0.4780	0.1770	0.8732	0.5842	1.0000	-0.3891	-0.0872	0.3884	0.1119	0.0649	0.0891
AGE	-0.1498	-0.2207	-0.0648	-0.4383	-0.4693	-0.3891	1.0000	0.0696	-0.1837	-0.2260	-0.0665	0.0448
SEX	-0.0377	-0.0065	-0.0003	-0.1267	-0.3905	-0.0872	0.0696	1.0000	0.1584	0.1246	0.1750	0.1672
RACE	-0.2870	-0.0174	0.1061	0.3313	0.3908	0.3884	-0.1837	0.1584	1.0000	0.0618	0.1261	-0.0960
ED.LEV.	0.0681	-0.0947	0.0653	0.1396	0.3406	0.1119	-0.2260	0.1246	0.0618	1.0000	0.8031	-0.0547
ONSET	0.0270	-0.0660	0.0753	0.0476	0.2054	0.0649	-0.0665	0.1750	0.1261	0.8031	1.0000	-0.0493
HEARING (0-1)	-0.0211	-0.1877	-0.1827	0.0642	0.0632	0.0891	0.0448	0.1672	-0.0960	-0.0547	-0.0493	1.0000
HEARING DISC.	-0.0520	-0.0980	-0.2595	0.2495	0.0221	0.2051	-0.1175	0.1535	-0.0975	0.0731	0.1146	0.7159
LIP-READING	0.0686	0.0494	-0.2247	0.2942	0.2916	0.2887	-0.4168	0.2535	0.2905	0.2483	0.2255	0.3403
SPEECH DISC.	0.0133	-0.1593	-0.4370	0.2061	0.1404	0.1693	-0.2194	-0.0127	-0.1452	0.2126	0.1972	0.5447
H.S.GPA-SCHOOL	0.3742	0.4795	0.5437	0.2902	0.2087	0.2809	-0.0978	-0.1207	0.0085	0.1302	0.0463	0.0499
F.Y.GPA*	0.2531	0.3956	0.4137	0.5861	0.4963	0.5535	-0.3649	-0.1482	0.2018	0.1392	0.1447	0.1511

TABLE IV-3 (CONCLUDED)

INTERCORRELATIONS OF VARIABLES
USED IN WITHIN-SCHOOL REGRESSIONS - SCHOOL A

	HEARING DISC.	LIP-RDNG.	SPEECH	H.S.GPA-SCH.	F.Y.GPA*
SDQ#4:	0.2785	0.2006	0.2531	-0.1240	-0.0183
SDQ#20:	0.2208	0.0472	0.1927	0.2566	-0.0575
SDQ#21:	-0.3375	0.0280	-0.1968	0.3504	0.1379
SDQ#22:	-0.2156	-0.0998	-0.2267	0.3816	0.4061
SDQ#24:	0.1955	0.0342	0.0354	0.1834	0.3306
SDQ#44A:	0.0750	0.0108	-0.0122	-0.0290	0.0770
SDQ#45A:	-0.0663	0.0597	-0.1179	0.4584	0.2797
SDQ#46A:	0.1795	0.1326	0.0755	0.1001	0.0610
SDQ#47:	-0.3358	-0.2075	-0.4143	0.1498	-0.1284
SDQ#48:	0.0280	-0.0189	-0.0138	0.2338	-0.0282
SDQ#49:	-0.2500	0.1195	-0.1368	0.1640	0.0941
SDQ#51:	-0.2103	-0.1713	-0.2785	0.2826	-0.0399
SDQ#52:	-0.3283	-0.3255	-0.3152	0.1968	-0.0290
SDQ#54:	-0.0950	0.1004	0.1004	-0.0255	-0.0608
SDQ#57:	-0.2656	-0.2822	-0.2179	0.0925	-0.1708
SDQ#5:	-0.2642	-0.3833	-0.4667	0.5078	0.5636
SDQ#12:	-0.3021	-0.1684	-0.3585	0.6013	0.4215
SDQ#12H:	0.2173	0.1084	0.0182	0.2559	0.3506
SDQ#18A:	0.1409	0.0628	0.0642	0.0398	0.2462
SDQ#23:	-0.1327	-0.0127	-0.2300	0.4271	0.2093
SDQ#50:	-0.0972	-0.0462	-0.0711	0.4265	0.4284
SDQ#53:	-0.2676	-0.2366	-0.3182	0.3511	0.0533
SDQ#56:	-0.2503	-0.1716	-0.2388	0.3124	0.0523
SDQ#58:	-0.1600	-0.1039	-0.2017	0.3727	0.2598
SDQ#59:	-0.0520	0.0686	0.0133	0.3742	0.2531
SDQ#60:	-0.0980	0.0494	-0.1593	0.4795	0.3956
H.S.GPA	-0.2595	-0.2247	-0.4370	0.5437	0.4137
SAT-V	0.2495	0.2942	0.2061	0.2902	0.5861
SAT-M	0.0221	0.2916	0.1404	0.2087	0.4963
TSWE SCORE	0.2051	0.2887	0.1693	0.2809	0.5535
AGE	-0.1175	-0.4168	-0.2194	-0.0978	-0.3649
SEX	0.1535	0.2535	-0.0127	-0.1207	-0.1482
RACE	-0.0975	0.2905	-0.1452	0.0085	0.2018
ED.LEV.	0.0731	0.2483	0.2126	0.1302	0.1392
ONSET	0.1146	0.2255	0.1972	0.0463	0.1447
HEARING (0-1)	0.7159	0.3403	0.5447	0.0499	0.1511
HEARING DISC.	1.0000	0.3166	0.7310	-0.1783	0.1468
LIP-READING	0.3166	1.0000	0.6730	-0.0395	0.0480
SPEECH	0.7310	0.6730	1.0000	-0.1862	-0.0021
H.S.GPA-SCHOOL	-0.1783	-0.0395	-0.1862	1.0000	0.4777
F.Y.GPA*	0.1468	0.0480	-0.0021	0.4777	1.0000

(3) Set 3 contains the demographic variables sex, race and age plus an average of the coded levels of father's and mother's occupation. The codes are as follows: 0 = unemployed, 1 = housewife, 2 = clerical/manufacturing, 3 = semi-professional, 4 = professional.

(4) Set 4 contains the variables related to deafness: age of onset of deafness in years, speech discrimination average (with and without a hearing aid on a 1-5 scale), lip reading average (with and without cues on a 1-5 scale), and quality of speech on a 1-5 scale. A further variable is derived from a 1-5 scale from Institution C, based on decibel loss in the better ear. These scales are all reversed from the originals so that more ability is associated with higher values. These 5 variables are named "ONSET," "HEARING-S," "LIP-READ," "SPEECH" and "HEARING-D" in the order just described.

2. The validities. Validities (with a single asterisk if significant at the 5% level or less and a double asterisk if significant at the 1% level or less) are given in Table IV-4 below.

Table IV-4

Validities of First Year Average from Predictors for Institution A.

N = 45

	SDQ #4	SDQ #20	SDQ #21	SDQ #22
Validity	-.0183	-.0575	.1379	.4061**
	SDQ #26	SDQ #44A	SDQ #45A	SDQ #46A
Validity	.3306*	.0770	.2797*	.0610
	SDQ #47	SDQ #48	SDQ #49	SDQ #51
Validity	-.1284	-.0282	.0941	-.0399
	SDQ #52	SDQ #54	SDQ #57	SDQ #5
Validity	-.0290	-.0608	-.1708	.5636**
	SDQ #12	SDQ #12H	SDQ #18A	SDQ #23
Validity	.4215**	.3506**	.2462*	.2093
	SDQ #50	SDQ #53	SDQ #56	SDQ #58
Validity	.4284**	.0533	.0523	.2598*
	SDQ #59	SDQ #60	H.S.GPA	SAT-V
Validity	.2531*	.3956**	.4137**	.5861**
	SAT-M	TSWE	Age	Sex
Validity	.4963**	.5535**	-.3649**	-.1482
	Race	Ed. Level	Onset	Hearing-D
Validity	.2018	.1392	.1447	.1511
	Hearing-S	Lip-Read	Speech	H.S. GPA-SC
Validity	.1468	.0480	-.0021	.4777**

From This table it will be seen that the following variables significantly predict first year grade point average:

Variable	Description
SDQ #22	Participation in clubs in high school
SDQ #24	Level of education planned
SDQ #45A	No. of extra-curriculars in high school
SDQ #5	Class rank in high school
SDQ #12	No. of A grades in high school
SDQ #12H	No. of honors courses in high school
SDQ #18A	No. of advanced placement courses
SDQ #50	Creative writing ability
SDQ #59	Spoken expression facility
SDQ #60	Written espression facility
H.S.GPA	High school grade point average (calculated from SDQ responeses)
H.S.GPA-SC	High school grade point average (calculated by high school)
SAT-V	SAT Verbal
SAT-M	SAT Mathematics
TSWE	Test of Standard Written English
Age	Age at time of SAT

These variables contain some of each of sets 1-4 previously mentioned. The validity for age is the only significantly negative one. This simply implies that the younger the candidate the higher the freshman average. Since the variables were all scaled in such a way that the higher value was assumed to correspond to higher grades it is reassuring that any small negative validities are not significant. Validities of .50 or greater occur for class rank, number of A grades, SAT-V, SAT-Q, and TSWE.

3. Regressions results. A table giving multiple R with associated F statistics, degree of freedom and probability for each set of predictors described, follows.

Table IV-5

Regression Results for Institution A

Set of predictors	R	F	P
SAT-V & SAT-M	.6018	11.9 (2,42)	.0001
SAT-V & SAT-M & H.S.GPA	.6418	9.6 (3,41)	.0001
SDQ	.8686	2.1 (26,18)	.0506
Demographics	.4245	2.2 (4,40)	.0865
Deafness-related	.3102	.83 (5,39)	.5359

Since the number of variables is large relative to the number of cases, the multiple R should be considered somewhat inflated. However, from the P value it can be seen that the SAT, the H.S.GPA and the SDQ are all good predictors, whereas the demographics and the deafness-related variables are not.

In order to obtain a less inflated value for the SDQ set, where the inflation may be most severe (26 predictors for 45 cases, leading to inadequate degrees of freedom) the following procedure was used: The SDQ set only was stepped in with forward and backward regression; all variables were retained subject to the following rules: (a) all variables finally retained must contribute a value of .01 or greater to the multiple R squared, (b) the selection procedure must stop just before the regression weight of any predictor becomes different in sign from the corresponding validity. Using these rules only S.D.Q. #5 (high school rank) and S.D.Q. #50 (self-reported ability in creative writing) were selected. Both had positive weights. The result values then become:

Predictors	R	F	P
SDQ #5, #50	.6281	13.7 (2,42)	0.0

This gives a more justifiable value for the multiple R for the SDQ set. Individual weights in all other sets of predictors retained sign of the corresponding validity.

D. Validities and regressions for School B

1. Introductory remarks. The validities for School B are based on the missing data type of covariance matrix previously described for School A. As before, the N used in this adjusted matrix, obtained by substituting means and standard deviations of known cases, is the maximum N of the sample. In the case of School B, the missing data problem is more severe than for School A, particularly with regard to SDQ variables and age. Again 4 sets of predictors are used in the regressions. Table IV-6 gives the intercorrelations. The N's, means and sigmas are in Appendix B.

As before, a few variables are peculiar to School B. Of these, Stanford Achievement Test total score-grade equivalence and California Entry Reading were included only in the intercorrelation table but not in the regressions. Stanford Achievement Test total and part scores are used as predictors in the admissions process at School B. The California Reading Test is used after admission. Demographic data on parents' education level and on parents' occupational level are included in the demographic set. The coded values are averaged in each case over both parents (or one if only one value is present). The codes for occupational level (after treating unknown values as missing and reversing the scale) are: 1 = unskilled, 2 =

TABLE IV-6

INTERCORRELATIONS OF VARIABLES
USED IN WITHIN-SCHOOL REGRESSIONS - SCHOOL B

	SDQ84:	SDQ820:	SDQ821:	SDQ822:	SDQ824:	SDQ844A:	SDQ845A:	SDQ846A:	SDQ847:	SDQ848:	SDQ849:	SDQ851:
SDQ84:	1.0000	-0.0475	-0.1347	-0.2212	-0.0171	-0.0406	-0.0788	0.0080	0.0106	-0.0439	0.2400	-0.0076
SDQ820:	-0.0475	1.0000	0.0305	0.0955	0.1662	0.0894	0.3248	0.2151	0.0520	-0.0886	-0.0330	0.1484
SDQ821:	-0.1347	0.0305	1.0000	0.1802	0.1116	0.0278	0.3309	0.1048	0.1772	0.0280	0.4762	0.1301
SDQ822:	-0.2212	0.0955	0.1802	1.0000	0.0494	0.1211	0.3420	0.1880	0.2334	-0.0087	-0.0084	0.0744
SDQ824:	-0.0171	0.1662	0.1116	0.0494	1.0000	0.0278	0.2017	0.1901	-0.0153	0.0405	0.0530	-0.0527
SDQ844A:	-0.0406	0.0894	0.0278	0.1211	0.0278	1.0000	0.2603	0.3454	-0.0426	-0.0068	-0.0093	-0.0216
SDQ845A:	-0.0788	0.3248	0.3309	0.3420	0.2017	0.2603	1.0000	0.5640	0.1681	0.0967	0.1081	0.1401
SDQ846A:	0.0080	0.2151	0.1048	0.1880	0.1901	0.3454	0.5640	1.0000	0.1895	0.0520	0.0283	0.0239
SDQ847:	0.0106	0.0520	0.1772	0.2334	-0.0153	-0.0426	0.1681	0.1895	1.0000	0.2649	0.3213	0.2670
SDQ848:	-0.0439	-0.0886	0.0280	-0.0087	0.0405	-0.0068	0.0967	0.0520	0.2649	1.0000	0.2345	0.2355
SDQ849:	0.2400	-0.0330	0.4762	-0.0084	0.0530	-0.0093	0.1081	0.0283	0.3213	0.2345	1.0000	0.3094
SDQ851:	-0.0076	0.1484	0.1301	0.0744	-0.0527	-0.0216	0.1401	0.0239	0.2670	0.2355	0.3094	1.0000
SDQ852:	0.0328	0.2020	0.2335	0.2414	-0.0105	-0.1266	0.1958	-0.0197	0.3959	0.1779	0.4147	0.5308
SDQ854:	-0.0663	-0.0301	0.2042	-0.1194	0.0387	-0.1237	-0.0687	-0.0542	0.1375	0.2653	0.4085	0.0556
SDQ857:	0.0081	0.2650	0.1064	0.1694	0.0699	-0.1354	0.1253	0.0179	0.3604	0.1870	0.2664	0.3096
SDQ85:	-0.0633	-0.1143	0.1103	0.2905	0.2022	-0.0517	0.0693	0.0365	0.0989	0.1886	0.1376	0.0568
SDQ812:	-0.0303	-0.0088	0.0203	0.3147	0.2994	-0.0187	0.1642	0.2298	0.0620	0.1323	0.0219	0.0928
SDQ812H:	0.0441	0.0126	-0.0558	0.0269	0.1800	0.0690	0.0668	0.2293	-0.0764	-0.0460	-0.0289	-0.0561
SDQ818A:	-0.0016	-0.0230	0.1076	0.0432	0.0184	0.1634	0.2289	0.3057	0.0370	-0.0042	0.0648	0.0271
SDQ823:	-0.0774	0.0500	0.0665	0.2513	0.1235	-0.0387	0.1469	0.1521	0.0911	0.2527	0.0699	0.1701
SDQ850:	-0.0144	0.0234	0.0870	0.2427	0.0360	-0.0613	0.2586	0.1433	0.3999	0.2509	0.2729	0.1590
SDQ853:	0.1614	-0.1401	0.1053	0.0056	0.0909	-0.1408	-0.0066	-0.0569	0.1046	0.0783	0.3462	0.3294
SDQ856:	-0.1067	0.0481	0.0548	0.0467	0.0300	-0.1025	0.0761	0.0356	0.2641	0.2353	0.3234	0.3932
SDQ858:	-0.0594	0.0362	0.2377	0.0796	0.1742	-0.1471	0.0222	0.0119	0.3026	0.1369	0.3769	0.1761
SDQ859:	-0.0584	0.1085	0.1146	0.2541	0.0650	0.0215	0.2722	0.2423	0.3946	0.1762	0.2570	0.3171
SDQ860:	0.0289	0.0496	0.0979	0.2238	0.0386	-0.0692	0.2179	0.2094	0.3774	0.1396	0.2139	0.2463
H.S.GPA	-0.0180	-0.0651	0.0339	0.2778	0.2661	-0.0374	0.0832	0.1320	0.0470	0.1575	0.0897	0.1152
SAT-V	-0.0086	0.0378	-0.0593	0.0342	0.1538	-0.1082	0.1123	0.1728	-0.0476	-0.0987	-0.1372	-0.2235
SAT-M	0.1363	-0.0425	0.0680	-0.0745	0.1980	-0.1756	0.0371	0.0124	-0.1059	-0.0275	0.0342	-0.0401
TSWE SCORE	-0.0178	0.0584	0.0286	0.1783	0.2194	-0.1240	0.1787	0.1583	-0.0192	-0.0133	-0.0612	-0.1276
AGE	0.0452	-0.1110	0.0855	-0.3037	-0.0924	-0.0359	-0.3044	-0.2962	0.0241	0.0824	0.2090	0.3011
SEX	-0.0367	0.0511	-0.1085	0.1217	-0.0055	0.1012	0.2089	0.2465	-0.0570	0.0432	-0.0750	0.0397
RACE	0.0756	-0.0068	0.1370	0.0095	0.1240	-0.1253	0.0817	-0.0589	-0.0923	-0.0501	0.0138	-0.0548
ED.LEV.	0.0681	-0.0156	0.0880	-0.0004	0.2328	-0.0295	0.0443	-0.1104	-0.0423	-0.0674	-0.0846	0.0093
OCC.LEV.	-0.0671	0.0406	0.0658	-0.0267	-0.0443	-0.1460	-0.1364	0.0051	-0.0371	-0.1810	-0.0407	0.0156
ONSET	-0.1238	0.0887	-0.0689	0.0084	0.0655	0.0767	-0.0112	0.2245	0.0324	0.1532	-0.0334	0.0822
HEARING (0-1)	0.1967	0.1790	-0.1109	-0.1374	-0.0153	-0.1103	-0.0732	-0.0495	-0.0714	-0.0257	-0.0402	-0.0087
HEARING DISC.	-0.0499	0.0498	-0.1702	-0.1661	0.1180	-0.1077	-0.1894	-0.1311	-0.0796	-0.1362	-0.0345	-0.1538
STANFORD-T.	-0.0160	-0.0326	0.1526	0.0640	0.1391	-0.1243	-0.0086	-0.0897	-0.0777	0.0748	0.0952	0.0937
CALIF. RDG.	-0.0642	-0.1918	0.0123	-0.0811	0.0549	-0.0941	-0.0495	-0.1327	-0.0948	-0.0464	-0.0719	-0.0378
F.Y.GPA*	0.0168	-0.0416	-0.0183	0.1187	0.0187	-0.1252	-0.0202	-0.0419	0.0720	0.1800	0.0277	0.1284

TABLE IV-6 (CONTINUED)

INTERCORRELATIONS OF VARIABLES
USED IN WITHIN-SCHOOL REGRESSIONS - SCHOOL B

	SDQ#52:	SDQ#54:	SDQ#57:	SDQ#5:	SDQ#12:	SDQ#12H:	SDQ#18A:	SDQ#23:	SDQ#50:	SDQ#53:	SDQ#56:	SDQ#58:
SDQ#4:	0.0328	-0.0663	0.0081	-0.0633	-0.0303	0.0441	-0.0016	-0.0774	-0.0144	0.1614	-0.1067	-0.0594
SDQ#20:	0.2020	-0.0301	0.2650	-0.1143	-0.0088	0.0126	-0.0230	0.0500	0.0234	-0.1401	0.0481	0.0362
SDQ#21:	0.2335	0.2042	0.1064	0.1103	0.0203	-0.0558	0.1076	0.0665	0.0870	0.1053	0.0548	0.2377
SDQ#22:	0.2414	-0.1194	0.1694	0.2905	0.3147	0.0269	0.0432	0.2513	0.2427	0.0056	0.0467	0.0796
SDQ#24:	-0.0105	0.0387	0.0699	0.2022	0.2994	0.1800	0.0184	0.1235	0.0360	0.0909	0.0300	0.1742
SDQ#44A:	-0.1266	-0.1237	-0.1354	-0.0517	-0.0187	0.0690	0.1634	-0.0387	-0.0613	-0.1408	-0.1025	-0.1471
SDQ#45A:	0.1958	-0.0687	0.1253	0.0693	0.1642	0.0668	0.2289	0.1469	0.2586	-0.0066	0.0761	0.0222
SDQ#46A:	-0.0197	-0.0542	0.0179	0.0365	0.2298	0.2293	0.3057	0.1521	0.1433	-0.0569	0.0356	0.0119
SDQ#47:	0.3959	0.1375	0.3604	0.0989	0.0620	-0.0764	0.0370	0.0911	0.3999	0.1046	0.2641	0.3026
SDQ#48:	0.1779	0.2653	0.1870	0.1686	0.1323	-0.0460	-0.0042	0.2527	0.2509	0.0783	0.2353	0.1369
SDQ#49:	0.4147	0.4085	0.2664	0.1376	0.0219	-0.0289	0.0648	0.0699	0.2729	0.3462	0.3234	0.3769
SDQ#51:	0.5308	0.0556	0.3096	0.0568	0.0928	-0.0561	0.0271	0.1701	0.1590	0.3294	0.3932	0.1761
SDQ#52:	1.0000	0.1081	0.5255	0.1945	0.0780	-0.0381	0.0498	0.1907	0.3651	0.3389	0.3993	0.2677
SDQ#54:	0.1081	1.0000	0.1569	-0.0400	-0.0066	-0.0979	0.0478	-0.0650	0.2409	0.1543	0.2167	0.2374
SDQ#57:	0.5255	0.1569	1.0000	0.1471	0.0632	0.0008	0.0762	0.3208	0.4156	0.3103	0.3700	0.3091
SDQ#5:	0.1945	-0.0400	0.1471	1.0000	0.5941	0.3007	0.1121	0.4420	0.2227	0.3796	0.2691	0.2542
SDQ#12:	0.0780	-0.0066	0.0632	0.5941	1.0000	0.3732	0.1499	0.5023	0.2038	0.3126	0.2157	0.2692
SDQ#12H:	-0.0381	-0.0979	0.0008	0.3007	0.3732	1.0000	0.2351	0.2432	0.0493	0.1598	0.1229	0.1873
SDQ#18A:	0.0498	0.0478	0.0762	0.1121	0.1499	0.2351	1.0000	0.1430	0.0951	0.2389	0.0508	0.1226
SDQ#23:	0.1907	-0.0650	0.3208	0.4420	0.5023	0.2432	0.1430	1.0000	0.2558	0.2803	0.2035	0.2132
SDQ#50:	0.3651	0.2409	0.4156	0.2227	0.2038	0.0493	0.0951	0.2558	1.0000	0.1915	0.2885	0.3583
SDQ#53:	0.3389	0.1543	0.3103	0.3796	0.3126	0.1598	0.2389	0.2803	0.1915	1.0000	0.4146	0.4304
SDQ#56:	0.3993	0.2167	0.3700	0.2691	0.2157	0.1229	0.0508	0.2035	0.2885	0.4146	1.0000	0.4241
SDQ#58:	0.2677	0.2374	0.3091	0.2542	0.2692	0.1873	0.1226	0.2132	0.3583	0.4304	0.4241	1.0000
SDQ#59:	0.4677	0.0998	0.4570	0.1954	0.1833	0.0632	0.1633	0.2963	0.5488	0.2786	0.4761	0.2937
SDQ#60:	0.4032	0.0550	0.3925	0.2841	0.2552	0.1033	0.0894	0.2583	0.5966	0.2853	0.4343	0.3003
H.S.GPA	0.1069	0.0495	0.0674	0.6573	0.8117	0.2814	0.0803	0.4627	0.2350	0.3734	0.2648	0.2891
SAT-V	-0.1780	0.0886	-0.0241	0.1944	0.3315	0.2904	0.1542	0.2037	0.2218	-0.0113	-0.0337	0.1624
SAT-M	-0.0602	0.1472	-0.0048	0.2344	0.3751	0.3508	0.0523	0.1821	0.0006	0.3470	0.0758	0.2671
TSWE SCORE	-0.0947	0.0369	0.0495	0.3211	0.4324	0.3039	0.0461	0.2660	0.2331	0.0527	0.0436	0.2334
AGE	0.3342	-0.0728	0.1539	0.2034	-0.2180	-0.0492	-0.0740	0.0119	0.0813	0.0137	0.1501	-0.1689
SEX	-0.0426	-0.2605	-0.0718	-0.0216	-0.0322	-0.0058	-0.1728	-0.0096	0.0159	-0.2420	0.0494	-0.2760
RACE	0.0410	-0.0393	-0.0269	0.0072	0.0003	-0.0484	-0.0251	-0.0569	0.0687	0.0211	-0.0575	0.0070
ED.LEV.	-0.1500	0.0308	-0.1853	-0.0060	0.0839	0.1642	-0.1906	-0.0673	-0.0409	0.0262	0.0347	-0.0515
OCC.LEV.	-0.0570	0.0854	0.0182	-0.1484	0.0059	-0.0121	-0.2041	-0.0143	-0.1014	0.1014	0.0726	-0.1332
ONSET	-0.0737	0.1235	-0.0333	0.0919	0.1276	0.0570	0.1000	0.1031	0.1642	0.0249	0.0953	0.1854
HEARING (0-1)	0.0260	-0.1709	0.0728	-0.0388	0.0262	-0.1182	-0.0112	0.0491	-0.1752	0.0262	-0.0556	-0.0283
HEARING DISC.	-0.1789	-0.1033	0.0679	-0.2236	-0.1966	-0.0951	-0.1239	-0.1427	-0.1768	-0.1227	-0.0576	-0.0879
STANFORD T.	0.0419	0.1264	0.0383	0.2855	0.2649	0.2354	0.0710	0.3256	0.0715	0.4644	0.1537	0.2071
CALIF.RDG.	-0.0846	0.0895	-0.1010	0.0551	0.0485	-0.403 6	-0.0980	0.0576	-0.0689	0.0125	-0.0737	-0.0181
F.Y.GPA*	0.0141	-0.0257	-0.0714	0.3695	0.3061	-0.0073	-0.1414	0.2133	-0.0115	0.1917	0.1438	0.0385

TABLE IV-6 (CONTINUED)

INTERCORRELATIONS OF VARIABLES
USED IN WITHIN-SCHOOL REGRESSIONS - SCHOOL B

	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-M	TSWE SCORE	AGE	SEX	RACE	ED.LEV.	OCC.LEV.	ONSET
SDQ#4:	-0.0584	0.0289	-0.0180	-0.0086	0.1363	-0.0178	0.0452	-0.0367	0.0756	0.0681	-0.0671	-0.1238
SDQ#20:	0.1085	0.0496	-0.0651	0.0378	-0.0425	0.0584	-0.1110	0.0511	-0.0068	-0.0156	0.0406	0.0887
SDQ#21:	0.1146	0.0979	0.0339	-0.0593	0.0680	0.0286	0.0855	-0.1085	0.1370	0.0880	0.0658	-0.0689
SDQ#22:	0.2541	0.2238	0.2778	0.0342	-0.0745	0.1783	-0.3037	0.1217	0.0095	-0.0004	-0.0267	0.0084
SDQ#24:	0.0650	0.0386	0.2661	0.1538	0.1980	0.2194	-0.0924	-0.0055	0.1240	0.2328	-0.0443	0.0655
SDQ#44A:	0.0215	-0.0692	-0.0374	-0.1082	-0.1756	-0.1240	-0.0359	0.1012	-0.1253	-0.0295	-0.1460	0.0767
SDQ#45A:	0.2722	0.2179	0.0832	0.1123	0.0371	0.1787	-0.3044	0.2089	0.0817	0.0443	-0.1364	-0.0112
SDQ#46A:	0.2423	0.2094	0.1320	0.1728	0.0124	0.1583	-0.2962	0.2465	-0.0589	-0.1104	0.0051	0.2245
SDQ#47:	0.3946	0.3774	0.0470	-0.0476	-0.1059	-0.0192	0.0241	-0.0570	-0.0923	-0.0423	-0.0371	0.0324
SDQ#48:	0.1762	0.1396	0.1575	-0.0987	-0.0275	-0.0133	0.0824	0.0432	-0.0501	-0.0674	-0.1810	0.1532
SDQ#49:	0.2570	0.2139	0.0897	-0.1372	0.0342	-0.0612	0.2090	-0.0750	0.0138	-0.0846	-0.0407	-0.0334
SDQ#51:	0.3171	0.2463	0.1152	-0.2235	-0.0401	-0.1276	0.3011	0.0397	-0.0548	0.0093	0.0156	0.0822
SDQ#52:	0.4677	0.4032	0.1069	-0.1780	-0.0602	-0.0947	0.3342	-0.0426	0.0410	-0.1500	-0.0570	-0.0737
SDQ#54:	0.0998	0.0550	0.0495	0.0886	0.1472	0.0369	-0.0728	-0.2605	-0.0393	0.0308	0.0854	0.1235
SDQ#57:	0.4570	0.3925	0.0674	-0.0241	-0.0048	0.0495	0.1539	-0.0718	-0.0269	-0.1853	0.0182	-0.0333
SDQ#5:	0.1954	0.2841	0.6573	0.1944	0.2344	0.3211	0.2034	-0.0216	0.0072	-0.0060	-0.1484	0.0919
SDQ#12:	0.1833	0.2552	0.8117	0.3315	0.3751	0.4324	-0.2180	-0.0322	0.0003	0.0839	0.0059	0.1276
SDQ#12H:	0.0632	0.1033	0.2814	0.2904	0.3508	0.3039	-0.0492	-0.0058	-0.0484	0.1642	-0.0121	0.0570
SDQ#18A:	0.1633	0.0894	0.0803	0.1542	0.0523	0.0461	-0.0740	-0.1728	-0.0251	-0.1906	-0.2041	0.1000
SDQ#23:	0.2963	0.2583	0.4627	0.2037	0.1821	0.2660	0.0119	-0.0096	-0.0569	-0.0673	-0.0143	0.1031
SDQ#50:	0.5488	0.5966	0.2350	0.2218	0.0006	0.2331	0.0813	0.0159	0.0687	-0.0409	-0.1014	0.1642
SDQ#53:	0.2786	0.2853	0.3734	-0.0113	0.3470	0.0527	0.0137	-0.2420	0.0211	0.0262	0.1014	0.0249
SDQ#56:	0.4761	0.4343	0.2648	-0.0337	0.0758	0.0436	0.1501	0.0494	-0.0575	0.0347	0.0726	0.0953
SDQ#58:	0.2937	0.3003	0.2891	0.1624	0.2671	0.2334	-0.1689	-0.2760	0.0070	-0.0515	-0.1332	0.1854
SDQ#59:	1.0000	0.6259	0.2587	0.1185	0.0374	0.1241	-0.0469	0.1864	0.0931	0.0150	-0.1036	0.2411
SDQ#60:	0.6259	1.0000	0.3357	0.1792	0.0131	0.2299	-0.1543	0.0837	-0.0018	-0.0327	-0.0871	0.1776
H.S.GPA	0.2587	0.3357	1.0000	0.3149	0.3750	0.3910	-0.1659	0.0301	-0.0255	0.1220	0.0052	0.1477
SAT-V	0.1185	0.1792	0.3149	1.0000	0.5788	0.7976	-0.3522	-0.0142	0.0571	0.1532	-0.0116	0.1979
SAT-M	0.0374	0.0131	0.3750	0.5788	1.0000	0.5779	-0.4547	-0.2194	0.1452	0.2847	0.1065	0.1229
TSWE SCORE	0.1241	0.2299	0.3910	0.7976	0.5779	1.0000	-0.3482	0.0227	0.0597	0.2204	-0.0182	0.1632
AGE	-0.0469	-0.1543	-0.1659	-0.3522	-0.4547	-0.3482	1.0000	-0.0806	-0.0446	-0.1540	0.0767	-0.1999
SEX	0.1864	0.0837	0.0301	-0.0142	-0.2194	0.0227	-0.0806	1.0000	0.0178	0.0211	0.0140	0.0051
RACE	0.0931	-0.0018	-0.0255	0.0571	0.1452	0.0597	-0.0446	0.0178	1.0000	0.1714	0.0575	-0.0161
ED.LEV.	0.0150	-0.0327	0.1220	0.1532	0.2847	0.2204	-0.1540	0.0211	0.1714	1.0000	0.1525	-0.1349
OCC.LEV.	-0.1036	-0.0871	0.0052	-0.0116	0.1065	-0.0182	0.0767	0.0140	0.0575	0.1525	1.0000	-0.0640
ONSET	0.2411	0.1776	0.1477	0.1979	0.1229	0.1632	-0.1999	0.0051	-0.0161	-0.1349	-0.0640	1.0000
HEARING (0-1)	-0.1359	-0.0855	-0.0332	-0.1044	-0.0610	-0.0742	0.1462	-0.0176	-0.0610	-0.1742	0.0223	-0.0843
HEARING DISC.	-0.0945	-0.2220	-0.2099	-0.0586	-0.0404	-0.0324	0.0200	-0.0919	0.0458	-0.1687	0.1831	-0.0842
STANFORD T.	0.0507	0.0743	0.3641	0.4324	0.5665	0.4711	-0.4873	-0.2043	0.0953	0.1169	0.1341	-0.0956
CALIF. RDG.	-0.1110	-0.1428	0.1076	0.2026	0.1935	0.1923	0.0000	-0.0430	0.0358	-0.0167	-0.0613	0.0672
F.Y.GPA*	0.0437	0.0613	0.3121	0.0248	0.1927	0.1017	0.0358	0.0652	-0.0025	0.0771	-0.0119	0.1071

TABLE IV-6 (CONCLUDED)

INTERCORRELATIONS OF VARIABLES
USED IN WITHIN-SCHOOL REGRESSIONS - SCHOOL B

	HEAR. (0-1)	HEAR. DISC.	STNF.-T.	CAL.RDG.	F.Y.GPA*
SDQ#4:	0.1967	-0.0499	-0.0160	-0.0642	0.0168
SDQ#20:	0.1790	0.0498	-0.0326	-0.1918	-0.0416
SDQ#21:	-0.1109	-0.1702	0.1526	0.0123	-0.0183
SDQ#22:	-0.1374	-0.1661	0.0640	-0.0811	0.1187
SDQ#24:	-0.0153	0.1180	0.1391	0.0549	0.0187
SDQ#44A:	-0.1103	-0.1077	-0.1243	-0.0941	-0.1252
SDQ#45A:	-0.0732	-0.1894	-0.0086	-0.0495	-0.0202
SDQ#46A:	-0.0495	-0.1311	-0.0897	-0.1327	-0.0419
SDQ#47:	-0.0714	-0.0796	-0.0777	-0.0948	0.0720
SDQ#48:	-0.0257	-0.1362	0.0748	-0.0464	0.1800
SDQ#49:	-0.0402	-0.0345	0.0952	-0.0719	0.0277
SDQ#51:	-0.0087	-0.1538	0.0937	-0.0378	0.1284
SDQ#52:	0.0260	-0.1789	0.0419	-0.0846	0.0141
SDQ#54:	-0.1709	-0.1033	0.1264	0.0895	-0.0257
SDQ#57:	0.0728	0.0679	0.0383	-0.1010	-0.0714
SDQ#5:	-0.0388	-0.2236	0.2855	0.0551	0.3695
SDQ#12:	0.0262	-0.1966	0.2649	0.0485	0.3061
SDQ#12H:	-0.1182	-0.0951	0.2354	-0.4036	-0.0073
SDQ#18A:	-0.0112	-0.1239	0.0710	-0.0980	-0.1414
SDQ#23:	0.0491	-0.1427	0.3256	0.0576	0.2133
SDQ#50:	-0.1752	-0.1768	0.0715	-0.0689	-0.0115
SDQ#53:	0.0262	-0.1227	0.4644	0.0125	0.1917
SDQ#56:	-0.0556	-0.0576	0.1537	-0.0737	0.1438
SDQ#58:	-0.0283	-0.0879	0.2071	-0.0181	0.0385
SDQ#59:	-0.1359	-0.0945	0.0507	-0.1110	0.0437
SDQ#60:	-0.0855	-0.2220	0.0743	-0.1428	0.0613
H.S.GPA	-0.0332	-0.2099	0.3641	0.1076	0.3121
SAT-V	-0.1044	-0.0586	0.4324	0.2026	0.0248
SAT-M	-0.0610	-0.0404	0.5665	0.1935	0.1927
TSWE SCORE	-0.0742	-0.0324	0.4711	0.1923	0.1017
AGE	0.1462	0.0200	-0.4873	0.0000	0.0358
SEX	-0.0176	-0.0919	-0.2043	-0.0430	0.0652
RACE	-0.0610	0.0458	0.0953	0.0358	-0.0025
ED.LEV.	-0.1742	-0.1687	0.1169	-0.0167	0.0771
OCC.LEV.	0.0223	0.1831	0.1341	-0.0613	-0.0119
ONSET	-0.0843	-0.0842	-0.0956	0.0672	0.1071
HEARING (0-1)	1.0000	0.4435	-0.0567	-0.1303	-0.0746
HEARING DISC.	0.4435	1.0000	-0.0606	0.0972	-0.2283
STANFORD T.	-0.0567	-0.0606	1.0000	0.2305	0.2761
CALIF. RDG.	-0.1303	0.0972	0.2305	1.0000	0.1439
F.Y.GPA*	-0.0746	-0.2283	0.2761	0.1439	1.0000

semi-skilled, 3 = skilled, 4 = clerical and sales, 5 = management, 6 = lower professional, 7 = upper professional. The codes for educational level are: 1 = elementary, 2 = secondary, 3 = 2 yrs. college, 4 = 4 yrs. college, 5 = +4 yrs. college.

A scale of Institution B's speech discrimination is also included, ranging from 1 = "hears nothing" to 5 = "hears everything." As in the case of Institution A the variables used in the regressions may be described in 4 sets.

(1) Set 1 (the score variables) is in 2 groups as before: (a) SAT scores alone and (b) SAT scores with H.S.GPA (from SDQ responses) added

(2) Set 2: the SDQ questions

(3) Set 3: the demographic variables sex, race, age, parents' occupational level and parents' educational level

(4) Set 4: age of onset of deafness, hearing discrimination level (using the 1-5 better ear average decibel-level scale provided by Institution C and discussed previously) and speech understanding scale

2. Validities. The validities (with 1 or 2 asterisks for .05 and .01 significance levels) are given in Table IV-7 below.

Table IV-7

Validities of First Year Average from Predictors for Institution B.

N = 206

	SDQ #4	SDQ #20	SDQ #21	SDQ #22
Validity	.0168	-.0416	-.0183	.1187*
	SDQ #26	SDQ #44A	SDQ #45A	SDQ #46A
Validity	.0187	-.1252*	-.0202	-.0419
	SDQ #47	SDQ #48	SDQ #49	SDQ #51
Validity	.0720	.1800**	.0277	.1284*
	SDQ #52	SDQ #54	SDQ #57	SDQ #5
Validity	.0141	-.0257	-.0714	.3695**
	SDQ #12	SDQ #12H	SDQ #18A	SDQ #23
Validity	.3061**	-.0073	-.1414	.2133**
	SDQ #50	SDQ #53	SDQ #56	SDQ #58
Validity	-.0115	.1917**	.1438*	.0385
	SDQ #59	SDQ #60	H.S.GPA	SAT-V
Validity	.0437	.0613	.3121**	.0248
	SAT-M	TSWE	Age	Sex
Validity	.1927**	.1017	.0358	.0652
	Race	Ed. Level	Occ. Level	Onset
Validity	-.0325	.0771	-.0119	.1071
	Hearing-D	Hearing-S	Stanford Grade	California Grade
Validity	-.0746	-.2283**	.2761**	.1439**

From this table it will be seen that the following variables significantly predict cumulative grade point average:

Variable	Description
SDQ #22	Participation in club in high school
SDQ #44A	Number of areas in which assistance needed
SDQ #48	Artistic ability
SDQ #51	Getting along with others

SDQ #5	Class rank in high school
SDQ #12	No. of A grades in high school
SDQ #23	No. of honors received in high school
SDQ #53	Mathematical ability
SDQ #56	Ability to organize work
H.S.GPA	High school grade point average SDQ --
SAT-M	SAT Mathematics
Hearing-S	Speech comprehension College B scale
Stnf.-T	Stanford Achievement Test--grade equivalent
Cal. Rdg.	California Reading Test--grade equivalent

These variables are all positive in the direction of more of the attribute predicting greater success, excepting for SDQ #44A (number of areas in which assistance is asked for) and hearing level on the scale of College B. Other studies have also shown that college proficiency may often be related to greater loss of hearing within a deaf sample. It is no surprise that "number of areas needing help in" is negatively related to college grades.

3. Regression results. A table giving multiple R with associated F statistic, degrees of freedom and probability for each set of predictors described, follows.

Table IV-8

Regression Results for Institution B

Set of predictors	R	F	P
SAT-V & SAT-M	.2201	5.17 (2,203)	.0066
SAT-V & SAT-M & H.S.GPA	.3521	9.53 (3,202)	0.0
SDQ	.5484	2.96 (26,179)	0.0
Demographics	.1182	.567 (4,200)	.7275
Deafness-related	.2471	4.38 (3,202)	.0054

From the multiple R and the P value, it can be seen that the SAT, particularly in conjunction with high school grades is

highly significant. So is the set of SDQ responses. The deafness-related variables which predict are due mostly to College B's own scale of speech comprehension. Apparently the profoundly deaf can concentrate better on their studies (the contribution of this scale is negative!).

As was done for School A a more detailed analysis of the SDQ responses was made to detect any inflation of the multiple R with a large set of predictors. The same procedure and rules resulted in the selection and multiple R as follows:

Predictors	R	F	P
SDQ #5,18,12,12H,57,51	.4826	10.1 (6,199)	0.0

For School B SAT-V acted as a suppressor variable in the SAT set and the SAT plus H.S.G.P.A. set, i.e., it had a different sign from its validity coefficient. In the set of variables related to deafness the hard-of-hearing vs. deafness variable, related to decibel measurement also changed sign, perhaps an artifact of non-normality in this variable.

E. Validities and regressions for School C

1. Introductory remarks. The validities for School C are based on the missing data type of covariance matrix previously discussed. As before, the N used is the maximum N of the sample. Table IV-9 gives the intercorrelations. The N's, means, and standard deviations are found in Appendix B. The only variable that is peculiar to School C is the school-supplied high school grade point average (H.S.GPA-SC), on a 0 to 4 scale. The hearing discrimination variable, derived from the decibel loss of

TABLE IV-9

INTERCORRELATIONS OF VARIABLES
USED IN WITHIN-SCHOOL REGRESSIONS - SCHOOL C

	SDQ#4:	SDQ#20:	SDQ#21:	SDQ#22:	SDQ#24:	SDQ#44A:	SDQ#45A:	SDQ#46A:	SDQ#47:	SDQ#48:	SDQ#49:	SDQ#51:
SDQ#4:	1.0000	0.0438	-0.1235	-0.1486	0.1116	0.0425	-0.1496	0.1013	-0.1195	-0.0031	0.0052	-0.0294
SDQ#20:	0.0438	1.0000	0.0925	0.2637	0.0837	0.1713	0.3118	0.1548	0.0045	0.0751	0.0753	0.1722
SDQ#21:	-0.1235	0.0925	1.0000	0.0474	-0.0335	0.1070	0.1585	0.1541	-0.1543	-0.0433	0.5852	0.1573
SDQ#22:	-0.1486	0.2637	0.0474	1.0000	-0.0420	0.0764	0.4675	0.3075	-0.0207	-0.1229	-0.0863	0.1925
SDQ#24:	0.1116	0.0837	-0.0335	-0.0420	1.0000	-0.0124	0.0895	0.0973	0.0332	0.0956	-0.2240	-0.0302
SDQ#44A:	0.0425	0.1713	0.1070	0.0764	-0.0124	1.0000	0.2851	0.3765	-0.2431	0.1705	0.1183	-0.0202
SDQ#45A:	-0.1496	0.3118	0.1585	0.4675	0.0895	0.2851	1.0000	0.6039	-0.0877	-0.0463	0.0834	0.2324
SDQ#46A:	0.1013	0.1548	0.1541	0.3075	0.0973	0.3765	0.6039	1.0000	-0.1241	-0.0063	0.0744	0.2408
SDQ#47:	-0.1195	0.0045	-0.1543	-0.0207	0.0332	-0.2431	-0.0877	-0.1241	1.0000	-0.0131	0.0078	0.3834
SDQ#48:	-0.0031	0.0751	-0.0433	-0.1229	0.0956	0.1705	-0.0463	-0.0063	-0.0131	1.0000	-0.0401	0.0147
SDQ#49:	0.0052	0.0753	0.5852	-0.0863	-0.2240	0.1183	0.0834	0.0744	0.0078	-0.0401	1.0000	0.2934
SDQ#51:	-0.0294	0.1722	0.1573	0.1925	-0.0302	-0.0202	0.2324	0.2408	0.3834	0.0147	0.2934	1.0000
SDQ#52:	-0.1124	0.2320	0.1025	0.2584	-0.1255	-0.0152	0.1851	0.1689	0.3629	0.0617	0.1861	0.6923
SDQ#54:	0.1214	0.1081	0.1223	-0.1773	0.2740	0.1202	-0.0272	0.1117	0.0533	0.3881	0.1894	0.3284
SDQ#57:	0.0993	0.0977	0.0991	-0.0712	-0.1078	-0.1635	-0.0263	0.0718	0.1817	0.2487	0.1151	0.3047
SDQ#5:	-0.0253	0.0457	0.0063	0.3075	0.0688	-0.2707	0.0687	0.0967	0.0406	0.1107	0.0761	0.2206
SDQ#12:	0.1188	0.0750	0.0567	0.1546	0.1476	-0.2471	0.0094	0.0767	-0.0802	0.1789	-0.0343	-0.0764
SDQ#12H:	-0.1447	-0.1191	0.1040	0.0535	0.1208	0.0443	0.1827	0.0598	-0.1137	-0.1547	-0.1061	-0.1142
SDQ#18A:	0.1198	0.0186	0.2313	0.1803	0.0569	0.0366	0.1751	0.3358	0.0769	-0.1625	0.0269	-0.0605
SDQ#23:	-0.0894	0.1798	0.0591	0.3678	-0.0182	-0.0382	0.0530	0.0994	0.0033	0.0228	-0.0419	0.0571
SDQ#50:	-0.0612	0.1865	-0.0905	0.1283	0.2387	-0.2243	0.0862	0.1536	0.0942	0.1357	-0.1454	0.0330
SDQ#53:	0.1471	-0.0177	0.1555	-0.2048	0.0513	-0.0244	-0.0821	0.1006	-0.0101	0.0023	0.2732	0.1023
SDQ#56:	-0.0333	0.2860	0.3451	0.1000	-0.1715	0.0295	0.1017	0.2449	-0.0439	0.1862	0.3713	0.3363
SDQ#58:	0.0545	0.0976	0.0707	-0.0572	0.2496	-0.0168	0.0967	0.2186	0.1106	0.1081	0.1612	0.3047
SDQ#59:	-0.0116	0.2373	-0.0204	-0.0754	0.0172	-0.1129	0.1144	0.1365	0.2121	0.1627	-0.0175	0.2244
SDQ#60:	-0.1311	0.2930	-0.0236	0.1857	0.0342	-0.1875	0.0795	0.0532	0.2290	0.0786	0.0878	0.0941
H.S.GPA	0.1257	-0.0250	0.0063	0.1103	0.1263	-0.2802	-0.0558	0.0825	-0.0944	0.2802	0.0022	0.0065
SAT-V	0.1455	0.1759	-0.3031	0.0430	0.1749	-0.1586	0.0212	-0.0014	-0.1021	0.1153	-0.3231	-0.1843
SAT-M	0.2384	0.0955	-0.1344	-0.1481	0.2219	-0.0561	-0.1583	-0.0180	-0.3481	0.0222	-0.1226	-0.2538
TSWE SCORE	0.0970	0.0853	-0.2420	-0.0650	0.0936	-0.1641	0.0025	0.0195	-0.1083	-0.0439	-0.3201	-0.2237
AGE	0.0207	0.2543	0.1746	0.2817	0.0956	0.0105	0.1227	0.0653	-0.0434	-0.1749	-0.0052	-0.1484
SEX	0.0657	-0.0235	-0.2117	0.1681	-0.1279	-0.0420	0.0379	-0.0719	0.1781	-0.2641	-0.1020	0.0270
RACE	0.0423	0.0242	0.1825	0.1013	0.1783	0.0557	0.3391	0.2099	-0.0651	-0.0678	-0.0559	0.2222
ONSET	-0.1014	0.0637	0.0679	0.0193	0.1159	0.0227	0.0416	-0.0162	-0.0816	0.1007	-0.0458	-0.2362
HEARING(0-1)	-0.0400	0.1319	-0.1652	-0.1711	-0.2114	0.0582	0.1395	-0.0352	-0.1230	-0.2286	-0.1680	-0.2582
H.S.GPA-SCHOOL	0.1942	0.0513	-0.0134	0.1957	0.0601	-0.0598	0.0685	0.2306	-0.2455	0.2983	-0.0885	-0.0266
CUM. GPA	0.3610	0.0610	0.1344	-0.0379	0.0072	-0.1808	-0.0171	0.2144	-0.2682	0.1282	0.3090	0.1561
F.Y.GPA*	0.2597	0.1532	0.0456	-0.0777	0.0023	-0.0799	-0.0697	0.1787	-0.2956	0.1339	0.1710	0.0668

TABLE IV-9 (CONTINUED)

INTERCORRELATIONS OF VARIABLES
USED IN WITHIN-SCHOOL REGRESSIONS - SCHOOL C

	SDQ#52:	SDQ#54:	SDQ#57:	SDQ#5:	SDQ#12:	SDQ#12H:	SDQ#18A:	SDQ#23:	SDQ#50:	SDQ#53:	SDQ#56:	SDQ#58:
SDQ#4:	-0.1124	0.1214	0.0993	-0.0253	0.1188	-0.1447	0.1198	-0.0894	-0.0612	0.1471	-0.0333	0.0545
SDQ#20:	0.2320	0.1081	0.0977	0.0457	0.0750	-0.1191	0.0186	0.1798	0.1865	-0.0177	0.2860	0.0976
SDQ#21:	0.1025	0.1223	0.0991	0.0063	0.0567	0.1040	0.2313	0.0591	-0.0905	0.1555	0.3451	0.0707
SDQ#22:	0.2584	-0.1773	-0.0712	0.3075	0.1546	0.0535	0.1803	0.3678	0.1283	-0.2048	0.1000	-0.0572
SDQ#24:	-0.1255	0.2740	-0.1078	0.0688	0.1476	0.1208	0.0569	-0.0182	0.2387	0.0513	-0.1715	0.2496
SDQ#44A:	-0.0152	0.1202	-0.1635	-0.2707	-0.2471	0.0443	0.0366	-0.0382	-0.2243	-0.0244	0.0295	-0.0168
SDQ#45A:	0.1851	-0.0272	-0.0263	0.0687	0.0094	0.1827	0.1751	0.0530	0.0862	-0.0821	0.1017	0.0967
SDQ#46A:	0.1689	0.1117	0.0718	0.0967	0.0767	0.0598	0.3358	0.0994	0.1536	0.1006	0.2449	0.2186
SDQ#47:	0.3629	0.0533	0.1817	0.0406	-0.0802	-0.1137	0.0769	0.0033	0.0942	-0.0101	-0.0439	0.1106
SDQ#48:	0.0617	0.3881	0.2487	0.1107	0.1789	-0.1547	-0.1625	0.0228	0.1357	0.0023	0.1862	0.1081
SDQ#49:	0.1861	0.1894	0.1151	0.0761	-0.0343	-0.1061	0.0269	-0.0419	-0.1454	0.2732	0.3713	0.1612
SDQ#51:	0.6923	0.3284	0.3047	0.2206	-0.0764	-0.1142	-0.0605	0.0571	0.0330	0.1023	0.3363	0.3047
SDQ#52:	1.0000	0.2473	0.3649	0.2353	0.0772	-0.2006	-0.0984	0.2294	0.1131	0.1268	0.3623	0.2989
SDQ#54:	0.2473	1.0000	0.0901	0.0261	0.0805	-0.1081	-0.0415	-0.1055	0.0525	0.3292	0.2704	0.4188
SDQ#57:	0.3649	0.0901	1.0000	0.1957	0.3455	-0.1435	-0.1194	0.1928	0.0993	0.1120	0.3900	0.0826
SDQ#5:	0.2353	0.0261	0.1957	1.0000	0.3512	-0.1105	-0.2530	0.3182	0.3958	0.1012	0.1347	0.0745
SDQ#12:	0.0772	0.0805	0.3455	0.3512	1.0000	-0.0011	0.1776	0.3296	0.2108	0.4026	0.3037	0.3138
SDQ#12H:	-0.2006	-0.1081	-0.1435	-0.1105	-0.0011	1.0000	0.1206	0.0909	-0.0774	0.0796	0.1311	0.0510
SDQ#18A:	-0.0984	-0.0415	-0.1194	-0.2530	0.1776	0.1206	1.0000	0.1783	-0.0719	0.2432	0.1358	0.2510
SDQ#23:	0.2294	-0.1055	0.1928	0.3182	0.3296	0.0909	0.1783	1.0000	0.1734	0.0987	0.2398	0.0914
SDQ#50:	0.1131	0.0525	0.0993	0.3958	0.2108	-0.0774	-0.0719	0.1734	1.0000	-0.1180	-0.0153	0.1063
SDQ#53:	0.1268	0.3292	0.1120	0.1012	0.4026	0.0796	0.2432	0.0987	-0.1180	1.0000	0.3971	0.4334
SDQ#56:	0.3623	0.2704	0.3900	0.1347	0.3037	0.1311	0.1358	0.2398	-0.0153	0.3971	1.0000	0.3645
SDQ#58:	0.2989	0.4188	0.0826	0.0745	0.3138	0.0510	0.2510	0.0914	0.1063	0.4334	0.3645	1.0000
SDQ#59:	0.2410	0.1422	0.1906	0.0621	0.2143	-0.0325	0.0380	-0.0556	0.5166	0.0680	0.0991	0.1958
SDQ#60:	0.1689	-0.0035	0.1414	0.3574	0.2691	-0.0843	0.1527	0.2458	0.6736	-0.0070	0.1866	0.1917
H.S.GPA	0.1506	0.1946	0.2893	0.4698	0.8776	-0.1691	-0.0776	0.2561	0.2725	0.4263	0.2443	0.2255
SAT-V	-0.1812	0.1028	0.0050	0.1414	0.2645	-0.0775	-0.0705	-0.0804	0.5214	-0.2298	-0.2264	0.0612
SAT-M	-0.1837	0.1696	-0.0890	0.2329	0.3502	-0.0179	-0.0352	-0.0811	0.1962	0.3886	-0.0816	0.2204
TSWE SCORE	-0.1596	-0.0224	0.0168	0.0880	0.2446	0.0507	-0.0565	-0.0956	0.4557	-0.1729	-0.2766	-0.0329
AGE	-0.0992	-0.1164	0.0997	0.0227	0.1936	-0.0516	-0.0477	0.0731	0.0176	-0.1084	-0.1273	-0.1868
SEX	0.0426	-0.3063	0.0528	0.0374	-0.0374	-0.0449	-0.0082	0.0892	-0.1099	-0.1567	-0.1540	-0.1713
RACE	0.1725	0.1486	0.1014	0.0218	0.0168	0.0882	0.1016	-0.1056	0.0239	-0.0148	0.0104	0.0520
ONSET	-0.0714	0.0938	0.0990	0.0645	0.1938	-0.0927	-0.1987	0.0097	0.2763	-0.1141	-0.1053	-0.0358
HEARING (0-1)	-0.2607	-0.3090	0.0297	-0.4397	-0.0948	0.0485	0.0873	-0.1990	-0.2839	-0.1700	-0.1876	-0.2409
H.S.GPA-SCHOOL	0.1040	0.1749	0.1820	0.4103	0.5472	-0.0834	0.0968	0.3216	0.1706	0.3620	0.2324	0.1424
CUM. GPA	0.0663	0.2331	0.2989	0.2761	0.3359	-0.2450	-0.0605	0.0721	-0.0280	0.1620	0.3367	0.2705
F.Y.GPA*	-0.0078	0.2490	0.2461	0.1544	0.3205	-0.2468	-0.0400	-0.0180	-0.1388	0.1572	0.2663	0.2248

TABLE IV-9 (CONTINUED)

INTERCORRELATIONS OF VARIABLES
USED IN WITHIN-SCHOOL REGRESSIONS - SCHOOL C

	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-M	TSWE SCORE	AGE	SEX	RACE	ONSET	HEAR.(0-1)	H.S.GPA-SC
SDQ#4:	-0.0116	-0.1311	0.1257	0.1455	0.2384	0.0970	0.0207	0.0657	0.0423	-0.1014	-0.0400	0.1942
SDQ#20:	0.2373	0.2930	-0.0250	0.1759	0.0955	0.0853	0.2543	-0.0235	0.0242	0.0637	0.1319	0.0513
SDQ#21:	-0.0204	-0.0236	0.0063	-0.3031	-0.1344	-0.2420	0.1746	-0.2117	0.1825	0.0679	-0.1652	-0.0134
SDQ#22:	-0.0754	0.1857	0.1103	0.0430	-0.1481	-0.0650	0.2817	0.1681	0.1013	0.0193	-0.1711	0.1957
SDQ#24:	0.0172	0.0342	0.1263	0.1749	0.2219	0.0936	0.0956	-0.1279	0.1783	0.1159	-0.2114	0.0601
SDQ#44A:	-0.1129	-0.1875	-0.2802	-0.1586	-0.0561	-0.1641	0.0105	-0.0420	0.0557	0.0227	0.0582	-0.0598
SDQ#45A:	0.1144	0.0795	-0.0558	0.0212	-0.1583	0.0025	0.1227	0.0379	0.3391	0.0416	0.1395	0.0685
SDQ#46A:	0.1365	0.0532	0.0825	-0.0014	-0.0180	0.0195	0.0653	-0.0719	0.2099	-0.0162	-0.0352	0.2306
SDQ#47:	0.2121	0.2290	-0.0944	-0.1021	-0.3481	-0.1083	-0.0434	0.1781	-0.0651	-0.0816	-0.1230	-0.2455
SDQ#48:	0.1627	0.0786	0.2802	0.1153	0.0222	-0.0439	-0.1749	-0.2641	-0.0678	0.1007	-0.2286	0.2983
SDQ#49:	-0.0175	0.0878	0.0022	-0.3231	-0.1226	-0.3201	-0.0052	-0.1020	-0.0559	-0.0458	-0.1680	-0.0885
SDQ#51:	0.2244	0.0941	0.0065	-0.1843	-0.2538	-0.2237	-0.1484	0.0270	0.2222	-0.2362	-0.2582	-0.0266
SDQ#52:	0.2410	0.1689	0.1506	-0.1812	-0.1837	-0.1596	-0.0992	0.0426	0.1725	-0.0714	-0.2607	0.1040
SDQ#54:	0.1422	-0.0035	0.1946	0.1028	0.1696	-0.0224	-0.1164	-0.3063	0.1486	0.0938	-0.3090	0.1749
SDQ#57:	0.1906	0.1414	0.2893	0.0050	-0.0890	0.0168	0.0997	0.0528	0.1014	0.0990	0.0297	0.1820
SDQ#5:	0.0621	0.3574	0.4698	0.1414	0.2329	0.0880	0.0227	0.0374	0.0218	0.0645	-0.4397	0.4103
SDQ#12:	0.2143	0.2691	0.8776	0.2645	0.3502	0.2446	0.1936	-0.0374	0.0168	0.1938	-0.0948	0.5472
SDQ#12H:	-0.0325	-0.0843	-0.1691	-0.0775	-0.0179	0.0507	-0.0516	-0.0449	0.0882	-0.0927	0.0485	-0.0834
SDQ#18A:	0.0380	0.1527	-0.0776	-0.0705	-0.0352	-0.0565	-0.0477	-0.0082	0.1016	-0.1987	0.0873	0.0968
SDQ#23:	-0.0556	0.2458	0.2561	-0.0804	-0.0811	-0.0956	0.0731	0.0892	-0.1056	0.0097	-0.1990	0.3216
SDQ#50:	0.5166	0.6736	0.2725	0.5214	0.1962	0.4557	0.0176	-0.1099	0.0239	0.2763	-0.2839	0.1706
SDQ#53:	0.0680	-0.0070	0.4263	-0.2298	0.3886	-0.1729	-0.1084	-0.1567	-0.0148	-0.1141	-0.1700	0.3620
SDQ#56:	0.0991	0.1866	0.2443	-0.2264	-0.0816	-0.2766	-0.1273	-0.1540	0.0104	-0.1053	-0.1876	0.2324
SDQ#58:	0.1958	0.1917	0.2255	0.0612	0.2204	-0.0329	-0.1868	-0.1713	0.0520	-0.0358	-0.2409	0.1424
SDQ#59:	1.0000	0.5302	0.1610	0.2835	0.0007	0.2117	-0.0813	0.0183	0.2693	0.0954	0.0465	0.1694
SDQ#60:	0.5302	1.0000	0.2405	0.3595	0.0780	0.2574	0.1031	0.0797	-0.1629	0.2785	-0.2286	0.1477
H.S.GPA	0.1610	0.2405	1.0000	0.3231	0.3625	0.2462	0.1870	-0.1432	-0.0081	0.1038	-0.2622	0.6948
SAT-V	0.2835	0.3595	0.3231	1.0000	0.4949	0.8219	0.0895	-0.0775	0.0867	0.2062	-0.0464	0.0873
SAT-M	0.0007	0.0780	0.3625	0.4949	1.0000	0.5054	0.0613	-0.2806	0.0651	0.0630	-0.1189	0.2950
TSWE SCORE	0.2117	0.2574	0.2462	0.8219	0.5054	1.0000	0.0951	0.0459	0.0659	0.3504	0.1453	0.0943
AGE	-0.0813	0.1031	0.1870	0.0895	0.0613	0.0951	1.0000	-0.1452	0.0352	0.2437	-0.0672	0.0732
SEX	0.0183	0.0797	-0.1432	-0.0775	-0.2806	0.0459	-0.1452	1.0000	-0.1328	-0.0194	0.0844	0.0643
RACE	0.2693	-0.1629	-0.0081	0.0867	0.0651	0.0659	0.0352	-0.1328	1.0000	-0.0858	-0.1141	-0.0851
ONSET	0.0954	0.2785	0.1038	0.2062	0.0630	0.3504	0.2437	-0.0194	-0.0858	1.0000	-0.1434	0.0051
HEARING (0-1)	0.0465	-0.2286	-0.2622	-0.0464	-0.1189	0.1453	-0.0672	0.0844	-0.1141	-0.1434	1.0000	-0.1179
H.S.GPA-SCH.	0.1694	0.1477	0.6948	0.0873	0.2950	0.0943	0.0732	0.0643	-0.0851	0.0051	-0.1179	1.0000
CUM. GPA	0.0196	0.1022	0.3697	0.3502	0.3087	0.1401	0.1109	0.1375	0.0922	0.0535	-0.1918	0.3695
F.Y.GPA*	-0.0074	-0.0007	0.3989	0.3179	0.3736	0.1541	0.1142	0.0512	0.0428	-0.0423	-0.1354	0.4115

TABLE IV-9 (CONCLUDED)

INTERCORRELATIONS OF VARIABLES
USED IN WITHIN-SCHOOL REGRESSIONS - SCHOOL C

	CUM. GPA	F.Y.GPA*
SDQ#4:	0.3610	0.2597
SDQ#20:	0.0610	0.1532
SDQ#21:	0.1344	0.0456
SDQ#22:	-0.0379	-0.0777
SDQ#24:	0.0072	0.0023
SDQ#44A:	-0.1808	-0.0799
SDQ#45A:	-0.0171	-0.0697
SDQ#46A:	0.2144	0.1787
SDQ#47:	-0.2682	-0.2956
SDQ#48:	0.1282	0.1339
SDQ#49:	0.3090	0.1710
SDQ#51:	0.1561	0.0668
SDQ#52:	0.0663	-0.0078
SDQ#54:	0.2331	0.2490
SDQ#57:	0.2989	0.2461
SDQ#5:	0.2761	0.1544
SDQ#12:	0.3359	0.3205
SDQ#12H:	-0.2450	-0.2468
SDQ#18A:	-0.0605	-0.0400
SDQ#23:	0.0721	-0.0180
SDQ#50:	-0.0280	-0.1388
SDQ#53:	0.1620	0.1572
SDQ#56:	0.3367	0.2663
SDQ#58:	0.2705	0.2248
SDQ#59:	0.0196	-0.0074
SDQ#60:	0.1022	-0.0007
H.S.GPA	0.3697	0.3989
SAT-V	0.3502	0.3179
SAT-M	0.3087	0.3736
TSWE SCORE	0.1401	0.1541
AGE	0.1109	0.1142
SEX	0.1375	0.0512
RACE	0.0922	0.0428
ONSET	0.0535	-0.0423
HEARING (0-1)	-0.1918	-0.1354
H.S.GPA-SCH.	0.3695	0.4115
CUM. GPA	1.0000	0.9336
F.Y.GPA*	0.9336	1.0000

hearing in the better ear, was supplied by School C but also used by the other two schools.

2. Validities. The validities (with asterisks as before) are given in Table IV-10, following Table IV-9.

Table IV-10

Validities of First Year Average from Predictors for Institution C.

N = 150

	SDQ #4	SDQ #20	SDQ #21	SDQ #22
Validity	.2597**	.1532*	.0456	-.0777
	SDQ #24	SDQ #44A	SDQ #45A	SDQ #46A
Validity	.0023	-.0799	-.0697	.1787*
	SDQ #47	SDQ #48	SDQ #49	SDQ #51
Validity	-.2956**	.1339*	.1710*	.0668
	SDQ #52	SDQ #54	SDQ #57	SDQ #5
Validity	-.0078	.2490**	.2461**	.1544*
	SDQ #12	SDQ #12H	SDQ #18A	SDQ #23
Validity	.3205**	-.2468**	-.0400	-.0180
	SDQ #50	SDQ #53	SDQ #56	SDQ #58
Validity	-.1388*	.1572**	.2663**	.2248**
	SDQ #59	SDQ #60	H.S.GPA	SAT-V
Validity	-.0074	-.0007	.3989**	.3179**
	SAT-M	TSWE	Age	Sex
Validity	.3736**	.1541*	.1142	.0512
	Race	Onset	Hearing-D	H.S.GPA-SC
Validity	.0428	-.0423	-.1354*	.4115**

From this table one might write down the significant validities for N = 150 at the .05 and .01 levels. However, although the adjusted matrix has N = 150, the SDQ responses have an N of a maximum of 68 (who were found in the files

having SDQ). Since the correlations are all computed pairwise and are identical in the final matrix of correlations to their pairwise values (although the covariances are not), it would be more realistic to use an N between 68 and 150 for the test of the significance of the correlation coefficients. The critical values for N = 68 are .201 (5% level) and .282 (1% level). Using a one-sided test as before (assuming validities can be only positive, or, if negative, still requiring a one-sided test) we find the following shortened list of significant predictors:

Variable	Description
SDQ #4	Size of high school class
SDQ #47	Acting ability
SDQ #54	Mechanical ability
SDQ #57	Sales ability
SDQ #12	No. of A grades
SDQ #12A	No. of honors
SDQ #56	Ability to organize work
SDQ #58	Scientific ability
H.S.GPA	High school grade point average from SDQ
SAT-V	SAT verbal score
SAT-M	SAT quantitative score
H.S.GPA-SC	High school grade point average from secondary school

All of these validities are positive except SDQ #47 (acting ability) and SDQ #12A (number of honors courses). Possibly acting ability is associated with <u>not</u> studying in school. The number of honors courses taken by students in all 3 schools is very small (nearly always zero) so that the negative correlation may be due to a violation of a normality

assumption. H.S.GPA-SC is certainly a good predictor. The correlation with self-reported H.S.GPA is .70.

3. Regression results. A table given mulitple R with associated F statistic, degrees of freedom and probability for each set of predictors described, follows.

Table IV-11

Regression Results for Institution C

N = 150

Set of predictors	R	F	P
SAT-V & SAT-M	.4037	14.3 (2,147)	0.0
SAT-V & SAT-M & H.S.GPA	.4800	14.6 (3.146)	0.0
SDQ	.7649	6.67 (26,123)	0.0
Demographics	.1416	.995 (3.146)	.3982
Deafness-related	.1491	1.67 (2,147)	.1896

Again it may be seen that SAT-V and SAT-M, and especially with H.S.GPA added made good predictors. The entire set of SDQ responses appears to be an excellent predictor. Neither the demographics nor the deafness-related variables, as sets, seem outstandingly predictive.

As in the cases of Schools A and B a stepwise procedure was employed with the SDQ set both to reduce any inflated value of multiple R and to find which SDQ variables are the most important and reliable predictors. These results were found:

Predictors	R	F (6,143)	P
SDQ #12,47,12H,54,50 and 57	.6073	13.7	0.0

The regression weights of these variables, as well for those in the other sets, retained the signs of the validities.

F. Conclusion. We have given answers to the research questions asked at the beginning of the chapter. We have found individual variables showing significant correlations with college grade point average. In the within school regressions we have discovered that such variables as SAT scores, high school grade point average and certain SDQ responses, such as self-rated class rank, self-rated mathematical ability and self-rated ability to organize work are significantly predictive. There is considerable variation among schools. In the next chapter we examine the question of whether the SAT scores, with or without H.S.GPA are biased against the deaf in Institution C, where a hearing group may be used for comparison. Bias is also tested by comparing the models for the hearing group against the results for the handicapped in Schools A and B.

Chapter V

Contrasting Prediction Systems for Nonhandicapped and Handicapped Candidates

In this chapter we consider tests of differences between prediction systems for handicapped and nonhandicapped college-bound students. The focus will be on these two questions:

(1) Does the College Board Scholastic Aptitude Test predict college success for deaf students with the same degree of accuracy as for hearing students?

(2) Does the College Board Scholastic Aptitude Test combined with high school grade point average predict with equivalent accuracy for hearing and nonhearing students?

A. Background, models and restrictions.

1. The study of Ragosta and Jones (1981). One of the few previous studies on predicting deaf students' success in college was that of Ragosta and Jones cited earlier. In fact, data they used, from Institution C, was incorporated as part of the data base used in the present study. The conclusion of Ragosta and Jones was that "The SAT scores of deaf students (when available) were significantly lower than [those] of the hearing students and tended to underpredict deaf students' college performance. The combination of high school grade point average and SAT scores predicted performance equivalently for deaf and hearing students."

As mentioned in Chapter 2 several issues can confound any comparison of handicapped and nonhandicapped groups.

(1) Is the sample for the handicapped group large enough to be usable in statistical studies? For example, it is known that regression weights can fluctuate considerably, merely on the basis of how many students are included.

(2) If the total sample size for the control group is much larger than that for the handicapped, is a suitable adjustment made in the comparison to reflect this difference in N?

(3) Should any attempt be made to match the handicapped and nonhandicapped as to similar characteristics before the statistical test of different prediction systems is performed?

(4) Should all students who take the SAT be included in the study or only those who report their scores to the college in which they intend to enroll?

(5) Should the total group be used as the control sample or only the nonhandicapped group?

In the Ragosta and Jones study these issues were resolved as follows:

(1) The sample for the handicapped in the crucial anlayses included all those who had taken the SAT at Institution C between the college years 1970-1979, subject to these restrictions: (a) they must have a school-supplied high school grade point average as well as a first year college grade point average and both SAT scores and (b) they must not be transfer students. This gave a sample of about 60 students.

(2),(3) The sample from the hearing group was selected randomly from a much larger group so that an N of about twice the handicapped sample was available for the years 1970-1979. Thus these students were cohorts of the nonhandicapped. Thus the nonhandicapped and handicapped were studying under similar condition over a similar period of time.

(4) All SAT-takers, regardless of score reporting, were included in the study.

(5) Although the authors discuss the desirability of using the total group as the control sample, examination of the analyses reveals that they used "total" only in the sense of including both control and handicapped groups in the regression; they did not use the total group as a separate sample.

In the present study we have answered the five questions above in the following ways. A brief rationale is given for each decision.

(1) Fortunately we were able to procure a larger sample for the handicapped at Institution C than in the earlier study. Using restriction (b) above, i.e., they may not be transfer students, we dispensed with restriction (a) that they must have high school GPA for two reasons: (i) our primary focus was on the validity of the SAT in one model we used and (ii) high school GPA was present almost without exception in both models we used for comparisons; where it was absent we substituted means for missing data.

(2) In contrast to the Ragosta and Jones study we used the entire sample of hearing students, subject to one restriction discussed later. More accurate values of the regression coefficients for the hearing group were thus obtained. The statistical problem of adjustment for very unequal N's was handled by the method of least squares regression (parallel to unweighted means analysis). One run was performed selecting a small spaced sample of the hearing group as a check. The results were similar to those using the entire group.

(3),(4) Matching the handicapped and nonhandicapped on the basis of their being college cohorts was not explicitly performed in the present study. It is true that the sample from Institution C included almost identically the matched cohorts (60 deaf and 140 hearing) of the earlier study. However, as mentioned in Chapter 3, an additional group of handicapped students who had taken the SAT during the college years 1980-1983 was also procured. No data for exactly these years was obtained as a control sample. However, as in the case of the handicapped, an additional more recent set of nonhandicapped cases was added to the 140 cases from the older study. This latter very large group consisted of hearing students who had taken the SAT, all of whom had reported their scores to Institution C; all had a first year average in one of the college years 1979, 1980 or 1981. Because of the unweighted means analysis this sample may have been more valid simply

because of its size; it overlapped but did not exactly match the range of years for either handicapped sample.

Another type of implicit matching, however, was done in this study. In most of the analyses comparing prediction systems only those reporting scores to the institution (found in separate College Board files) were used. This again reduced the size of the deaf sample for Institution C to 68 cases but these cases had almost complete data, including SDQ responses. In within school and persistence analyses the larger sample of 150 cases (including those not reporting scores) was used. The effects of this type of matching will be touched on later.

A special advantage of selecting only those reporting scores was that it enabled a comparison to be made between the control sample (only those reporting scores) and the handicapped samples of Institutions A and B as well as C. Although the criterion, college grade point average, was on a somewhat different scale for Institutions A and B, than that for both hearing and deaf in Institution C, the predictors were all on the same scale. Thus in this study a comparison was attempted. In Institution A the entire sample consisted of those reporting scores and in Institution B a large number were found on the score report files (in addition, about 4/5ths had SDQ responses).

(5) The comparisons beween the deaf and hearing herein discussed did not use the "total" sample (both deaf and hearing) as a control. Although this is suggested by Gulliksen (1950) there are arguments against it. For one thing our procedure

emphasizes the possible contrast between the groups. For another, since our hearing sample is so large, the addition of the handicapped to this sample to form a total and reanalyzing would probably have little effect and in fact there were probably a few handicapped cases on the control file not designated as handicapped and yet different from the handicapped sample used. A third argument is that using the "total" encourages interaction in the model and may confuse interpretation. One analysis was in fact done using a total sample as a test; the results were hard to interpret because of the significant interaction.

2. Models used in the present analysis with accompanying restrictions. Three models were used in the comparative analyses between the deaf and the hearing in this study. In Model A only the SAT prediction systems were compared. In Model B both the SAT and the high school grade point average (from the self-reported SDQ responses) were used. In Model C the SAT, high school GPA, SDQ responses, Test of Standard Written English (TSWE), age and sex were jointly used. The reason for this final selection was that the Model C variables included all of those that were unambiguously found for both the nonhandicapped and handicapped groups. However, Model C was not actually reported except in the correlation of residuals with these variables because of loss of degrees of freedom due to small sample size for the handicapped.

No restrictions were placed on the selection of cases other than these: (1) first year average (or its surrogate,

cumulative grade point average, for School B) was required, (2) SAT scores were required and (3) the cases had to be found on College Board files (eliminating all non-score reporters in Institution C, except in one analysis discussed at the end of the chapter.)

3. Methods used in the comparison. Two primary methods were used in comparing predictions for the handicapped and the control group. Both methods are mentioned in Chapter II.

   a. The Gulliksen-Wilks analysis of covariance method. In this method regressions are performed for both the handicapped and control (or total) samples. The procedure is:

      (1) Test for homogeneity of variance for the two groups. If the F-test is non-significant proceed to (2).

      (2) Test for parallelism of slopes between the two samples. If this test is significant we have under or over prediction, depending on low or high values of the criterion. If this test is nonsignificant proceed to (3).

      (3) Test for equality of intercept. If this test is nonsignificant there is no appreciable bias in prediction for the handicapped. Otherwise we have over or under-prediction.

   b. The Belson-Cochran method. In this method regression weights derived from the control group are applied to the minority group. The residuals from the equation are examined. If they are positive there is underprediction for the minority group; if negative, overprediction. If

they are very small there is little of either. Even if there is slight under or overprediction the residuals may be correlated with variables not in the original model, for the minority group. These correlations reveal for which of these variables, if any, over or underprediction occurs.

4. Outline of analyses for the rest of this chapter. The rest of this chapter includes a brief discussion of the regression on the control sample, used in the comparisons. Next, a comparison is made with the handicapped from each institution using the methods above. Finally, there is a brief discussion involving a comparison for Institution C between the handicapped and nonhandicapped, using all available cases for the SAT, regardless of score report. The conclusions from this additional analysis contrast with the other results but are somewhat ambiguous.

Clearly, the comparisons between the hearing and the deaf groups at Institution C are the most valid, other things being equal, since both groups are under the same grading system. The comparisons between the hearing group at School C and deaf groups at Schools A and B, where the grading systems are all different (although still on a 0 to 4 scale) should be viewed with caution, as stated in Chapter II.

B. Validities and regressions for the control sample.

1. Validities. In order to have some idea of the significant variables for the control group, compared to the handicapped, the following table gives the validities for each of these predictors for this sample, with their significances (a single

TABLE V-1

INTERCORRELATIONS OF VARIABLES
USED IN REGRESSIONS FOR CONTROL SAMPLE (SCHOOL C)

	SDQ#4:	SDQ#20:	SDQ#21:	SDQ#22:	SDQ#24:	SDQ#44A:	SDQ#45A:	SDQ#46A:	SDQ#47:	SDQ#48:	SDQ#49:	SDQ#51:
SDQ#4:	1.0000	-0.0027	-0.0325	-0.0615	0.0260	-0.0037	-0.0754	-0.0104	-0.0323	-0.0017	0.0631	-0.0013
SDQ#20:	-0.0027	1.0000	0.0485	0.2927	0.1001	0.0609	0.4214	0.3187	0.1441	0.0540	0.0026	0.2032
SDQ#21:	-0.0325	0.0485	1.0000	0.0595	0.0448	0.0330	0.2010	0.0904	0.0155	0.0149	0.5652	0.1108
SDQ#22:	-0.0615	0.2927	0.0595	1.0000	0.0927	0.0684	0.4996	0.3366	0.1837	0.0655	-0.0036	0.2350
SDQ#24:	0.0260	0.1001	0.0448	0.0927	1.0000	0.0530	0.0853	0.1184	0.0729	0.0166	0.0635	0.1164
SDQ#44A:	-0.0037	0.0609	0.0330	0.0684	0.0530	1.0000	0.1375	0.2569	0.0201	-0.0096	0.0215	0.0394
SDQ#45A:	-0.0754	0.4214	0.2010	0.4996	0.0853	0.1375	1.0000	0.6378	0.2753	0.1538	0.1257	0.2819
SDQ#46A:	-0.0104	0.3187	0.0904	0.3366	0.1184	0.2569	0.6378	1.0000	0.2419	0.1560	0.0763	0.2493
SDQ#47:	-0.0323	0.1441	0.0155	0.1837	0.0729	0.0201	0.2753	0.2419	1.0000	0.3043	0.1201	0.2731
SDQ#48:	-0.0017	0.0540	0.0149	0.0655	0.0166	-0.0096	0.1538	0.1560	0.3043	1.0000	0.1333	0.1274
SDQ#49:	0.0631	0.0026	0.5652	-0.0036	0.0635	0.0215	0.1257	0.0763	0.1201	0.1333	1.0000	0.2166
SDQ#51:	-0.0013	0.2032	0.1108	0.2350	0.1164	0.0394	0.2819	0.2493	0.2731	0.1274	0.2166	1.0000
SDQ#52:	0.0407	0.2592	0.1387	0.3278	0.1733	0.0185	0.3256	0.2611	0.3512	0.1405	0.2713	0.5452
SDQ#54:	0.0218	0.0150	0.1258	-0.0438	0.1173	0.0141	0.0093	0.0221	0.1167	0.2350	0.2923	0.0994
SDQ#57:	0.0272	0.1378	0.0589	0.1614	0.1336	0.0028	0.2141	0.2079	0.3373	0.1482	0.1989	0.3802
SDQ#5:	-0.0049	0.0466	0.0349	0.1109	0.0817	-0.0298	0.0893	0.0479	0.0647	0.0813	0.0682	0.0692
SDQ#12:	0.0377	0.0326	0.0016	0.1066	0.0790	0.0088	0.0783	0.0608	-0.0113	0.0313	0.0127	0.0354
SDQ#12H:	0.0955	0.0729	0.0096	0.1002	0.0635	0.0118	0.1473	0.1006	0.0425	0.0522	-0.0067	0.0500
SDQ#18A:	-0.0169	0.0561	0.0222	0.0981	0.0839	0.1033	0.1224	0.1511	0.1099	0.0745	0.0361	0.0700
SDQ#23:	-0.0686	0.2070	0.0420	0.3603	0.0950	0.0361	0.3259	0.2426	0.1990	0.1227	0.0117	0.1505
SDQ#50:	0.0756	0.1172	0.0113	0.1348	0.1143	-0.0266	0.2142	0.2101	0.3339	0.2626	0.1308	0.2823
SDQ#53:	-0.0008	0.0056	0.0497	-0.0213	0.0956	-0.0299	-0.0201	-0.0065	0.0162	0.0912	0.1813	0.0679
SDQ#56:	0.0438	0.1687	0.0113	0.2092	0.1593	0.0045	0.2088	0.1965	0.1855	0.1545	0.1575	0.3938
SDQ#58:	0.0240	0.0745	0.0649	0.0284	0.1789	-0.0033	0.0653	0.0682	0.1471	0.2019	0.1998	0.1317
SDQ#59:	0.0457	0.1748	0.0314	0.1992	0.1539	-0.0213	0.2719	0.2451	0.4187	0.1637	0.1554	0.4391
SDQ#60:	0.0752	0.1262	-0.0018	0.1416	0.1225	-0.0207	0.2112	0.2037	0.3056	0.1838	0.1028	0.3296
H.S.GPA	0.0523	0.0253	0.0108	0.0913	0.0511	-0.0292	0.0722	0.0501	-0.0096	0.0271	0.0372	0.0502
SAT-V	0.0677	0.0190	-0.0846	0.0375	0.0215	-0.0509	0.1262	0.0753	0.0303	0.0692	-0.1272	-0.0555
SAT-M	0.1146	-0.0290	0.0066	-0.0480	0.0519	-0.0467	-0.0040	-0.0376	-0.0782	0.0502	0.0233	-0.1251
TSWE SCORE	0.0641	0.0084	-0.0675	0.0617	-0.0018	-0.0499	0.1493	0.0710	0.0104	0.0536	-0.0972	0.0055
AGE	-0.0023	0.0279	-0.0095	0.0068	0.0192	-0.0069	0.0186	0.0081	-0.0029	0.0030	-0.0011	0.0046
SEX	-0.0325	0.1020	-0.1814	0.1519	-0.0641	0.0212	0.1288	0.1216	-0.0278	-0.0179	-0.2259	0.0954
F.Y.GPA*	0.0344	-0.0182	-0.0178	0.0484	0.0247	-0.0247	0.0462	0.0100	-0.0026	0.0409	-0.0149	-0.0245

TABLE V-1 (CONTINUED)

INTERCORRELATIONS OF VARIABLES
USED IN REGRESSIONS FOR CONTROL SAMPLE (SCHOOL C)

	SDQ852:	SDQ854:	SDQ857:	SDQ85:	SDQ812:	SDQ812H:	SDQ818A:	SDQ823:	SDQ850:	SDQ853:	SDQ856:	SDQ858:
SDQ84:	0.0407	0.0218	0.0272	-0.0049	0.0377	0.0955	-0.0169	-0.0686	0.0756	-0.0008	0.0438	0.0240
SDQ820:	0.2592	0.0150	0.1378	0.0466	0.0326	0.0729	0.0561	0.2070	0.1172	0.0056	0.1687	0.0745
SDQ821:	0.1387	0.1258	0.0589	0.0349	0.0016	0.0096	0.0222	0.0420	0.0113	0.0497	0.0113	0.0649
SDQ822:	0.3278	-0.0438	0.1614	0.1109	0.1066	0.1002	0.0981	0.3603	0.1348	-0.0213	0.2092	0.0284
SDQ824:	0.1733	0.1173	0.1336	0.0817	0.0790	0.0635	0.0839	0.0950	0.1143	0.0956	0.1593	0.1789
SDQ844A:	0.0185	0.0141	0.0028	-0.0298	0.0088	0.0118	0.1033	0.0361	-0.0266	-0.0299	0.0045	-0.0033
SDQ845A:	0.3256	0.0093	0.2141	0.0893	0.0783	0.1473	0.1224	0.3259	0.2142	-0.0201	0.2088	0.0653
SDQ846A:	0.2611	0.0221	0.2079	0.0479	0.0608	0.1006	0.1511	0.2426	0.2101	-0.0065	0.1965	0.0682
SDQ847:	0.3512	0.1167	0.3373	0.0647	-0.0113	0.0425	0.1099	0.1990	0.3339	0.0162	0.1855	0.1471
SDQ848:	0.1405	0.2350	0.1482	0.0813	0.0313	0.0522	0.0745	0.1227	0.2626	0.0912	0.1545	0.2019
SDQ849:	0.2713	0.2923	0.1989	0.0682	0.0127	-0.0067	0.0361	0.0117	0.1308	0.1813	0.1575	0.1998
SDQ851:	0.5452	0.0994	0.3802	0.0692	0.0354	0.0500	0.0700	0.1505	0.2823	0.0679	0.3938	0.1317
SDQ852:	1.0000	0.2282	0.4628	0.1615	0.0907	0.0972	0.1120	0.2328	0.2975	0.1566	0.4715	0.2543
SDQ854:	0.2282	1.0000	0.2175	0.1568	0.0669	0.0791	0.0624	0.0353	0.1218	0.3794	0.2075	0.4753
SDQ857:	0.4628	0.2175	1.0000	0.0527	0.0228	0.0674	0.0774	0.1239	0.2721	0.1090	0.4361	0.2415
SDQ85:	0.1615	0.1568	0.0527	1.0000	0.5135	0.2043	0.1121	0.2661	0.1877	0.3735	0.2140	0.3314
SDQ812:	0.0907	0.0669	0.0228	0.5135	1.0000	0.1542	0.0825	0.2560	0.1768	0.2999	0.2070	0.2867
SDQ812H:	0.0972	0.0791	0.0674	0.2043	0.1542	1.0000	0.2114	0.1212	0.1453	0.1634	0.0987	0.1675
SDQ818A:	0.1120	0.0624	0.0774	0.1121	0.0825	0.2114	1.0000	0.1366	0.1248	0.1[illegible]	0.1036	0.1501
SDQ823:	0.2328	0.0353	0.1239	0.2661	0.2560	0.1212	0.1366	1.0000	0.1876	0.0989	0.2012	0.1177
SDQ850:	0.2975	0.1218	0.2721	0.1877	0.1768	0.1453	0.1248	0.1876	1.0000	0.0655	0.3116	0.2570
SDQ853:	0.1566	0.3794	0.1090	0.3735	0.2999	0.1634	0.1006	0.0989	0.0655	1.0000	0.2265	0.4477
SDQ856:	0.4715	0.2075	0.4361	0.2140	0.2070	0.0987	0.1036	0.2012	0.3116	0.2265	1.0000	0.2954
SDQ858:	0.2543	0.4753	0.2415	0.3314	0.2867	0.1675	0.1501	0.1177	0.2570	0.4477	0.2954	1.0000
SDQ859:	0.5317	0.1771	0.4669	0.1459	0.1088	0.1233	0.1280	0.1993	0.4624	0.0771	0.3918	0.2782
SDQ860:	0.3438	0.1218	0.3035	0.2083	0.2078	0.1430	0.1467	0.1804	0.7359	0.0803	0.3718	0.2726
H.S.GPA	0.0950	0.0602	0.0350	0.5283	0.8457	0.1273	0.0663	0.2311	0.1841	0.3181	0.2144	0.2413
SAT-V	0.0261	0.0983	-0.0447	0.2758	0.2900	0.2821	0.0228	0.1748	0.2686	0.0775	0.0384	0.2182
SAT-M	-0.0094	0.2645	-0.0709	0.3391	0.3145	0.2432	0.0283	0.0902	0.0548	0.5201	0.0136	0.3422
TSWE SCORE	0.0184	0.0268	-0.0315	0.2358	0.2764	0.2313	-0.0032	0.1580	0.2577	0.0748	0.0502	0.1215
AGE	0.0196	0.0176	0.0135	0.0077	-0.0045	0.0074	-0.0056	-0.0092	-0.0077	-0.0015	0.0079	0.0102
SEX	-0.0533	-0.4023	-0.0379	-0.0334	0.0494	-0.0138	-0.0587	0.0409	0.0187	-0.2294	0.0646	-0.2533
F.Y.GPA*	0.0193	0.0240	-0.0333	0.3074	0.3709	0.1523	-0.0214	0.1452	0.1257	0.1840	0.1043	0.1718

TABLE V-1 (CONCLUDED)

INTERCORRELATIONS OF VARIABLES
USED IN REGRESSIONS FOR CONTROL SAMPLE (SCHOOL C)

	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-M	TSWE SCORE	AGE	SEX	F.Y.GPA*
SDQ#4:	0.0457	0.0752	0.0523	0.0677	0.1146	0.0641	-0.0023	-0.0325	0.0344
SDQ#20:	0.1748	0.1262	0.0253	0.0190	-0.0290	0.0084	0.0279	0.1020	-0.0182
SDQ#21:	0.0314	-0.0018	0.0108	-0.0846	0.0066	-0.0675	-0.0095	-0.1814	-0.0178
SDQ#22:	0.1992	0.1416	0.0913	0.0375	-0.0480	0.0617	0.0068	0.1519	0.0484
SDQ#24:	0.1539	0.1225	0.0511	0.0215	0.0519	-0.0018	0.0192	-0.0641	0.0247
SDQ#44A:	-0.0213	-0.0207	-0.0292	-0.0509	-0.0467	-0.0499	-0.0069	0.0212	-0.0247
SDQ#45A:	0.2719	0.2112	0.0722	0.1262	-0.0040	0.1493	0.0186	0.1288	0.0462
SDQ#46A:	0.2451	0.2037	0.0501	0.0753	-0.0376	0.0710	0.0081	0.1216	0.0100
SDQ#47:	0.4187	0.3056	-0.0096	0.0303	-0.0782	0.0104	-0.0029	-0.0278	-0.0026
SDQ#48:	0.1637	0.1838	0.0271	0.0692	0.0502	0.0536	0.0030	-0.0179	0.0409
SDQ#49:	0.1554	0.1028	0.0372	-0.1272	0.0233	-0.0972	-0.0011	-0.2259	-0.0149
SDQ#51:	0.4391	0.3296	0.0502	-0.0555	-0.1251	0.0055	0.0046	0.0954	-0.0245
SDQ#52:	0.5317	0.3438	0.0950	0.0261	-0.0094	0.0184	0.0196	-0.0533	0.0193
SDQ#54:	0.1771	0.1218	0.0602	0.0983	0.2645	0.0268	0.0176	-0.4023	0.0240
SDQ#57:	0.4669	0.3035	0.0350	-0.0447	-0.0709	-0.0315	0.0135	-0.0379	-0.0333
SDQ#5:	0.1459	0.2083	0.5283	0.2758	0.3391	0.2358	0.0077	-0.0334	0.3074
SDQ#12:	0.1088	0.2078	0.8457	0.2900	0.3145	0.2764	-0.0045	0.0494	0.3709
SDQ#12H:	0.1233	0.1430	0.1273	0.2821	0.2432	0.2313	0.0074	-0.0138	0.1523
SDQ#18A:	0.1280	0.1467	0.0663	0.0228	0.0283	-0.0032	-0.0056	-0.0587	-0.0214
SDQ#23:	0.1993	0.1804	0.2311	0.1748	0.0902	0.1580	-0.0092	0.0409	0.1452
SDQ#50:	0.4624	0.7359	0.1841	0.2686	0.0548	0.2577	-0.0077	0.0187	0.1257
SDQ#53:	0.0771	0.0803	0.3181	0.0775	0.5201	0.0748	-0.0015	-0.2294	0.1840
SDQ#56:	0.3918	0.3718	0.2144	0.0384	0.0136	0.0502	0.0079	0.0646	0.1043
SDQ#58:	0.2782	0.2726	0.2413	0.2182	0.3422	0.1215	0.0102	-0.2533	0.1718
SDQ#59:	1.0000	0.6049	0.1037	0.1850	-0.0149	0.1629	-0.0026	-0.0042	0.0477
SDQ#60:	0.6049	1.0000	0.2110	0.2698	0.0578	0.2781	-0.0144	0.0370	0.1138
H.S.GPA	0.1037	0.2110	1.0000	0.2832	0.3020	0.2924	-0.0079	0.0654	0.3948
SAT-V	0.1850	0.2698	0.2832	1.0000	0.5346	0.7518	-0.0402	-0.0277	0.3576
SAT-M	-0.0149	0.0578	0.3020	0.5346	1.0000	0.4926	-0.0325	-0.2684	0.3404
TSWE SCORE	0.1629	0.2781	0.2924	0.7518	0.4926	1.0000	-0.0481	0.0673	0.3385
AGE	-0.0026	-0.0144	-0.0079	-0.0402	-0.0325	-0.0481	1.0000	-0.0055	-0.0153
SEX	-0.0042	0.0370	0.0654	-0.0277	-0.2684	0.0673	-0.0055	1.0000	0.0318
F.Y.GPA*	0.0477	0.1138	0.3948	0.3576	0.3404	0.3385	-0.0153	0.0318	1.0000

asterisk represents the .05 level and a double asterisk, the .01 level). Table V-1 contains the intercorrelations of all variables in the control sample. A complete table of N's, means and sigmas is given in Appendix C. The following table, Table V-2, gives the validities for these variables with first year college grade point average as the criterion as in the other samples.

Table V-2

Validities of First Year Average from Predictors for Control Sample

N = 4060

	SDQ #4	SDQ #20	SDQ #21	SDQ #22
Validity	.0344	-.0182	-.0178	.0484**
	SDQ #26	SDQ #44A	SDQ #45A	SDQ #46A
Validity	.0247	-.0247	.0462**	.0100
	SDQ #47	SDQ #48	SDQ #49	SDQ #51
Validity	-.0026	.0409**	-.0149	-.0245
	SDQ #52	SDQ #54	SDQ #57	SDQ #5
Validity	.0193	.0240	-.0333*	.3074**
	SDQ #12	SDQ #12H	SDQ #18A	SDQ #23
Validity	.3709**	.1523**	-.0214	.1452**
	SDQ #50	SDQ #53	SDQ #56	SDQ #58
Validity	.1257**	.1840**	.1043**	.1718**
	SDQ #59	SDQ #60	H.S.GPA	SAT-V
Validity	.0477**	.1138**	.3948**	.3576**
	SAT-M	TSWE	Age	Sex
Validity	.3404**	.3385**	-.0153**	.0318*

From This table it will be seen that the following variables significantly predict grade point average. However, because of

very large sample size, these significances may be oversensitive to small relationships.

Variable	Description
SDQ #4	Size of high school class
SDQ #22	Participation in clubs and organizations in high school
SDQ #45A	Number of activities participated in in high school
SDQ #48	Self-rating on artistic ability
SDQ #57	Self-rating on sales ability
SDQ #5	Class rank in high school
SDQ #12	Number of high school subject areas with A grades
SDQ #12H	Number of honors courses in high school
SDQ #23	Number of honors received in high school
SDQ #50	Self-rating in creative writing
SDQ #53	Self-rating in mathematics
SDQ #56	Self-rating in organizing work
SDQ #58	Self-rating in science
SDQ #59	Self-rating in spoken expression
SDQ #60	Self-rating in written expression
H.S.GPA	High school grade point average--SDQ
SAT-V	SAT verbal score
SAT-M	SAT mathematics score
TSWE	Test of Standard Written English
Sex	(Postive validity is for women

2. Regressions. Several regressions were performed simultaneously on the control sample (restricted to score-reporters). These were:

(1) Model A: SAT-V and SAT-M

(2) Model B: SAT-V, SAT-M plus H.S.GPA

(3) Model C: All variables entered together including SDQ, TSWE, sex and age

(4) Free-to-enter-or-leave regression, provided multiple R exceeded .01 in either case, to determine the key variables overall, regardless of model. The results were as follows:

Table V-3

Regression Results for Control Sample

Set of predictors	R	F	P
Model A: SAT-V & SAT-M	.3988	383.7 (2,4057)	0.0
Model B: SAT-V, SAT-M & H.S.GPA	.4862	418.49 (3,4056)	0.0
Model C: SAT-V, SAT-M H.S.GPA, TSWE, SDQ, age, sex	.5084	43.86 (32,4027)	0.0
All variables free to enter/leave; test is increase in R^2 > .01	.4862	418.49 (3,4056)	0.0

The only variables predicting significantly when the criterion was increase in multiple R squared of .01 or greater were SAT-V, SAT-M and high school grades (case (4) above).

For the sake of completeness the contribution of the SDQ responses to predicting first year average for the controls is also given, both for the entire set and for those questions showing a significant stepwise contribution. Just the same rules were used (same sign as the validities, etc.) as for the deaf samples. Here are the added results:

Predictors	R	F	P
SDQ--entire set	.4327	35.7 (26,4033)	0.0
SDQ-selected: SDQ #12,#5	.3951	375.3 (2,4057)	0.0

C. Comparisons with Institution C.

1. The Gulliksen-Wilks analysis of covariance method. Using the samples restricted to those reporting scores (N = 4060 for the control sample, N = 68 for the handicapped sample) we have this summary for Models A and B. The accompanying Table V-4 gives more detail on the analysis of covariance. "Z" stands for all

TABLE V-4

ANALYSIS OF COVARIANCE
TESTS FOR HEARING VS. DEAF
PREDICTION SYSTEMS FOR SCHOOL C

MODEL 1: S.A.T. ONLY

********** ANALYSIS OF COVARIANCE TABLE **********

DEPENDENT VARIABLE F.Y.GPA*

SOURCE	SUM OF SQUARES	NDF	MEAN SQUARE	F RATIO	PROBABILITY OF LARGER F	CONTRIBUTION TO R. SQ.	R SQUARE
TOTAL	27468.1648	4128					
MEAN	25552.1891	1	25552.1891	55039.2588	0.0		
ERROR	1915.9757	4127	0.4643				
HEAR/NOT	0.8111	1	0.8111	2.0752	0.1498	0.0004	
Z	302.7896	2	151.3948	387.3614	0.0	0.1580	
ERROR	1611.8077	4124	0.3908				0.1588
HZ	0.6516	2	0.3258	0.8335	0.4346		
ERROR	1611.1561	4122	0.3909				0.1591

MODEL 2: S.A.T. PLUS H.S. G.P.A

********** ANALYSIS OF COVARIANCE TABLE **********

DEPENDENT VARIABLE F.Y.GPA*

SOURCE	SUM OF SQUARES	NDF	MEAN SQUARE	F RATIO	PROBABILITY OF LARGER F	CONTRIBUTION TO R. SQ.	R SQUARE
TOTAL	27468.1648	4128					
MEAN	25552.1891	1	25552.1891	55039.2588	0.0		
ERROR	1915.9757	4127	0.4643				
HEAR/NOT	0.6438	1	0.6438	1.8132	0.1783	0.0003	
Z	450.6307	3	150.2102	423.0402	0.0	0.2352	
ERROR	1463.9666	4123	0.3551				0.2359
HZ	0.9713	3	0.3238	0.9118	0.4344		
ERROR	1462.9953	4120	0.3551				0.2364

covariates taken together (SAT scores or SAT scores and H.S.GPA) and "HZ" is the interaction with "H" for hearing/handicapped dichotomy.

Model A: SAT-V and SAT-M only

Test	F value (d.f.)	Significance
Homogeneity of variance	1.20 (4057,65)	.175 (NS)
Parallelism of slopes	.8335 (2,4122)	.435 (NS)
Equality of intercept	2.075 (1,4124)	.150 (NS)

Model B: SAT scores plus H.S.GPA

Test	F value (d.f.)	Significance
Homogeneity of variance	1.18 (4056,64)	.196 (NS)
Parallelism of slopes	.912 (3,4120)	.434 (NS)
Equality of intercept	.178 (1,4123)	.178 (NS)

These tables show no significant under or overprediction for the handicapped. The regression equation for the normal group may be applied to the handicapped without any significant bias.

2. The Belson methods: application of regression weights from the control group to the handicapped group with calculation of residuals. The regression weights from the 4060 control cases were applied to predict the first year average of the handicapped. A frequency distribution of the residuals (in college grade point average units) was calculated (with means, standard deviations and extreme values). The results are as follows:

Model A (SAT only)

Mean = .119 S.D. = .57
Lowest value = -1.33 Highest value = 1.39

Since the standard deviation of the FYA itself is only .594 the average residual is very small, only 1/5 of this value. Since the mean is positive there is a slight underprediction for the handicapped.

Model B (SAT plus H.S.GPA)

Mean = .101 S.D. = .55
Lowest value = -1.40 Highest value = 1.12

This model gives a slightly lower average value for the residuals, about 1/6 of the FYA standard deviation for the control group.

3. Correlations of residuals with variables not in Model B. Since Model B gives lower residuals than Model A, Model B was used as the basis for correlating the residuals with variables not in the model. This would tend to show any predictors not in the model which might tend to have some bias against the deaf by over or underprediction even though Model B itself shows no bias. It should be emphasized, however, that the entire group of additional predictors in Model C seems to increase the accuracy and lessen any possible bias. Examination of overall residuals from Model C (which includes all other variables) seems to show this, although the interpretation of regression weights for Model C is complicated by variables which act as suppressors and the number of degrees freedom is lessened here). In fact, the mean residual for Model C is only .04.

Table V-5 shows correlations of all independent variables with the residuals. Some of these variables for the same sample are only found in the within-school regressions.

TABLE V-5

CORRELATION OF RESIDUALS FROM THE EQUATION
FOR THE CONTROL SAMPLE (MODEL B) WITH
PREDICTORS OF PERFORMANCE OF THE
HANDICAPPED AT SCHOOL C

ALL CORRELATIONS AND ACCOMPANYING SIGNIFICANCES:

	SDQ#4:	SDQ#20:	SDQ#21:	SDQ#22:	SDQ#24:	SDQ#44A	SDQ#45A	SDQ#46A	SDQ#47:	SDQ#48:	SDQ#49:	SDQ#51:	SDQ#52:	SDQ#54:	SDQ#57:
N	63.000	61.000	63.000	61.000	61.000	65.000	65.000	65.000	61.000	63.000	63.000	64.000	63.000	63.000	62.000
CORREL.	0.142	0.111	0.155	-0.107	-0.143	0.083	-0.028	0.166	-0.184	-0.001	0.301	0.174	0.021	0.132	0.171
PROBAB.	0.129	0.192	0.108	0.202	0.132	0.252	0.413	0.090	0.074	0.498	0.008	0.082	0.435	0.148	0.089

	SDQ#5:	SDQ#12:	SDQ#12H	SDQ#18A	SDQ#23:	SDQ#50:	SDQ#53:	SDQ#56:	SDQ#58:	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-M	TSWE
N	59.000	65.000	65.000	65.000	62.000	63.000	63.000	63.000	63.000	64.000	63.000	62.000	68.000	68.000	68.000
CORREL.	-0.110	-0.134	-0.179	0.004	-0.076	-0.445	-0.005	0.275	0.098	-0.152	-0.209	-0.144	-0.182	-0.153	-0.256
PROBAB.	0.199	0.141	0.073	0.486	0.274	0.000	0.485	0.013	0.218	0.112	0.047	0.128	0.066	0.103	0.016

	AGE	SEX	RACE	ONSET	HEAR(0-1)	HEAR-S.	CUM.GPA	F.Y.GPA
N	68.000	68.000	68.000	66.000	51.000	65.000	58.000	68.000
CORREL.	0.013	0.081	-0.069	-0.175	0.036	0.076	0.714	0.797
PROBAB.	0.457	0.254	0.286	0.077	0.400	0.269	0.0	0.0

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Omitting FYA, SAT-V, SAT-M, and H.S.GPA we find these significant correlations (the N for each variable is not adjusted for missing data so as to maximize variance, correlation and significance). These predictors are significant (a positive correlation stands for underprediction indicated by "-" and a negative one for overprediction, indicated "+"):

Variable	Description
SDQ #49 (-)	Self-rating on athletic ability
SDQ #50 (+)	Self-rating on creative writing
SDQ #56 (-)	Self-rating on organizing work
SDQ #60 (+)	Self-rating on written espression
TSWE (+)	Test of Standard Written English

From this list (which does not include school-supplied cumulative GPA which resembles FYA in the model) it is seen that deaf students' college grades are underpredicted by self-rating in athletic ability and in organizing work but these grades are overpredicted by their self-ratings on creative writing, written expression and a formal test of writing. Actual ability in these latter skills, all demanding an understanding of sentence structure, which is difficult for the deaf, presumably affects college grades.

D. Comparisons with Institution A

1. The Gulliksen-Wilks method, using analysis of covariance.

Using the same samples as before (N = 4060 for the controls, N = 45 for Institution A) we have the summary which follows for Models A and B. It must be repeated that since we are (1) comparing a hearing group with a handicapped group from a

different school and (2) the grading scales are different although the ranges are similar (0 to 4), it is to be expected that there will be differences in prediction systems for both Models A and B, which are not due to bias but to differences in schools. The accompanying Table V-6 gives further details. In Table 10, as before, "Z" stands for covariates and "HZ" for interaction of the covariates with the hearing/handicapped dichotomy.

Model A: SAT scores only

Test	F value (d.f.)	Significance
Homogeneity of variance	1.635 (42,4057)	.059 (NS)
Parallelism of slopes	2.50 (2,4099)	.082 (NS)
Equality of intercept	22.57 (1,4101)	0.0 (S)

Model B: SAT scores plus H.S.GPA

Test	F value (d.f.)	Significance
Homogeneity of variance	1.420 (41,4056)	.041 (S)
Parallelism of slopes	1.76 (3,4097)	.152 (NS)
Equality of intercept	21.45 (1,4100)	0.0 (S)

These tables show that for Institution A the prediction systems for Model A (SAT only) show homogeneity of variance and parallel slopes. For Model B there is a slightly significant non-homogeneity of variance. However, according to Keppel (1973, pp. 75-76) mild violation of homogeneity of variance may not be serious. The slopes for Model B are parallel as for Model A. There is a distinct under or overprediction of the handicapped in School A using the regression line from School C

TABLE V-6

ANALYSIS OF COVARIANCE
TESTS FOR HEARING (SCHOOL C) VS.
DEAF (SCHOOL A) PREDICTION SYSTEMS

MODEL 1: S.A.T. ONLY

********** ANALYSIS OF COVARIANCE TABLE **********

DEPENDENT VARIABLE F.Y.GPA*

SOURCE	SUM OF SQUARES	NDF	MEAN SQUARE	F RATIO	PROBABILITY OF LARGER F	CONTRIBUTION TO R. SQ.	R SQUARE
TOTAL	27421.1703	4105					
MEAN	25494.1480	1	25494.1480	54295.1600	0.0		
ERROR	1927.0223	4104	0.4695				
HEAR/NOT	8.8864	1	8.8864	22.5742	0.0000	0.0046	
Z	311.5048	2	155.7524	395.6592	0.0	0.1617	
ERROR	1614.3702	4101	0.3937				0.1622
HZ	1.9705	2	0.9853	2.5047	0.0819		
ERROR	1612.3997	4099	0.3934				0.1633

MODEL 2: S.A.T. PLUS H.S. G.P.A.

********** ANALYSIS OF COVARIANCE TABLE **********

DEPENDENT VARIABLE F.Y.GPA*

SOURCE	SUM OF SQUARES	NDF	MEAN SQUARE	F RATIO	PROBABILITY OF LARGER F	CONTRIBUTION TO R. SQ.	R SQUARE
TOTAL	27421.1703	4105					
MEAN	25494.1480	1	25494.1480	54295.1600	0.0		
ERROR	1927.0223	4104	0.4695				
HEAR/NOT	7.6704	1	7.6704	21.4467	0.0000	0.0040	
Z	459.5162	3	153.1721	428.2755	0.0	0.2385	
ERROR	1466.3587	4100	0.3576				0.2391
HZ	1.8904	3	0.6301	1.7629	0.1521		
ERROR	1464.4683	4097	0.3574				0.2400

in both Models A and B. In order to find whether the prediction is over or under we resort to the Belson method.

2. The Belson method: calculation of residuals for School A from the regression equation for the controls in School C. The frequency distribution and other statistics for School A show the following:

Model A (SAT only)

Mean = .45 S.D. = .74
Lowest value = -1.34 Highest value = 1.61

Since the mean residual is positive there is underprediction as before. The mean is now almost equal to the standard deviation of the normal group, .594. It is difficult to tell how much is due to a school effect and how much to any under or overprediction due to handicap. As before we may correlate the predictors not in Model B with the residuals.

Model B (SAT plus H.S.GPA)

Mean = .41 S.D. = .71
Lowest value = -1.42 Highest value = 1.66

Here too the mean residual is positive, implying some possible underprediction. The addition of H.S.GPA may mean more equivalence with the control group since now the mean has been reduced slightly.

3. Correlation of residuals with predictors not in Model B. As before, we correlate the residuals with the predictors available for School A with the same basic sample as used in computing the residuals. By using pairwise correlations significances may be shown for each N; these are shown in Table V-7. As

TABLE V-7

CORRELATION OF RESIDUALS FROM THE EQUATION
FOR THE CONTROL SAMPLE (MODEL B) WITH
PREDICTORS OF PERFORMANCE OF THE
HANDICAPPED AT SCHOOL A

ALL CORRELATIONS AND ACCOMPANYING SIGNIFICANCES:

	SDQ84:	SDQ820:	SDQ821:	SDQ822:	SDQ824:	SDQ844A	SDQ845A	SDQ846A	SDQ847:	SDQ848:	SDQ849:	SDQ851:	SDQ852:	SDQ854:	SDQ857:
N	41.000	42.000	41.000	42.000	40.000	42.000	42.000	42.000	42.000	42.000	42.000	42.000	42.000	42.000	42.000
CORREL.	0.140	-0.054	-0.038	0.245	0.167	0.135	0.068	-0.122	-0.132	-0.116	0.030	0.067	-0.064	-0.099	-0.112
PROBAB.	0.185	0.363	0.405	0.054	0.145	0.190	0.331	0.215	0.196	0.226	0.424	0.333	0.340	0.262	0.235

	SDQ85:	SDQ812:	SDQ812H	SDQ818A	SDQ823:	SDQ850:	SDQ853:	SDQ856:	SDQ858:	SDQ859:	SDQ860:	H.S.GPA	SAT-V	SAT-M	TSWE
N	40.000	42.000	42.000	42.000	41.000	42.000	42.000	42.000	42.000	41.000	42.000	40.000	45.000	45.000	45.000
CORREL.	0.364	0.116	0.130	0.130	-0.029	0.353	-0.101	0.048	0.061	0.237	0.266	0.058	0.295	0.215	0.339
PROBAB.	0.009	0.227	0.201	0.200	0.426	0.009	0.257	0.378	0.348	0.063	0.041	0.359	0.022	0.073	0.010

	AGE	SEX	RACE	ED.LEV.	ONSET HEAR.(0-1)	HEAR D.	LIP-RD	SPEECH	HSGPA-S	F.Y.GPA
N	45.000	45.000	40.000	39.000	39.000	44.000	41.000	40.000	39.000	42.000	45.000
CORREL.	-0.264	-0.104	0.074	0.073	0.115	0.223	0.192	0.012	0.044	0.334	0.901
PROBAB.	0.036	0.243	0.321	0.324	0.236	0.068	0.109	0.469	0.392	0.013	0.0

before the significant correlations are listed here ("-" standing for underprediction and "+" for overprediction).

Variable	Description
SDQ #5 (-)	High school rank
SDQ #50 (-)	Self-rated creative writing
SDQ #60 (-)	Self-rating on written espression
TSWE (-)	Test of Standard Written English
Age (+)	Age in years
H.S.GPA (school-supplied)(-)	High school grade point average

For Institution A only age is negatively correlated with the residuals, that is, on the basis of age, the greater the age the less well students do, using the regression equation for the control group. This might be interpreted to mean that older deaf students do less well than expected. The other five predictors show underprediction, i.e., students at School A do better in college than expected on the basis of the equation for the nonhandicapped at School C. However, as mentioned earlier, this might also be somewhat confounded by slight differences in grading, although the test showing parallel slopes would seem to indicate that School A and School C can be compared to a degree.

D. Comparisons with Institution B.

1. The Guilliksen-Wilks method. Here again the hearing for School C are restricted as before (N = 4060 for controls, N = 206 for the handicapped). Again the contrast between Schools A and B and School C must be borne in mind. Furthermore, School B is not necessarily a four year college, as are Schools A and C.

Moreover, it is technically and vocationally oriented. The results are given in Table V-8. A summary follows:

Model A: SAT scores only

Test	F value (d.f.)	Significance
Homogeneity of variance	1.116 (203,4057)	.135 (NS)
Parallelism of slopes	13.56 (2,4260)	0.0
Equality of intercept	121.8 (1,4262)	0.0

Model B: SAT scores plus H.S.GPA

Test	F value (d.f.)	Significance
Homogeneity of variance	1.136 (202,4056)	.099 (NS)
Parallelism of slopes	12.14 (3,4258)	0.0
Equality of intercept	159.01 (1,4261)	0.0

These tables show that for Institution B neither the Model A nor Model B prediction systems are comparable between the hearing at School C and the deaf at School B. Although the homogeneity of variance assumption is satisfied, the slopes are not parallel which makes the intercept test uncertain. Thus some values of the freshman grade point averages of the deaf at School B are underpredicted and others overpredicted by the regression equation for School C. All of this assumes a comparability of grading scales for Schools B and C. The differences between the schools themselves may well be the cause of the nonequivalence of prediction.

2. The Belson method: calculation of residuals for School B from School C controls. The statistics on residuals for School B include the following:

TABLE V-8

ANALYSIS OF COVARIANCE
TESTS FOR HEARING (SCHOOL C) VS.
DEAF (SCHOOL B) PREDICTION SYSTEMS

MODEL 1: S.A.T. ONLY

********** ANALYSIS OF COVARIANCE TABLE **********

DEPENDENT VARIABLE F.Y.GPA*

SOURCE	SUM OF SQUARES	NDF	MEAN SQUARE	F RATIO	PROBABILITY OF LARGER F	CONTRIBUTION TO R. SQ.	R SQUARE
TOTAL	28639.0495	4266					
MEAN	26648.3277	1	26648.3277	57092.4155	0.0		
ERROR	1990.7218	4265	0.4668				
HEAR/NOT	48.2765	1	48.2765	121.7945	0.0000	0.0243	
Z	294.5443	2	147.2722	371.5458	0.0	0.1480	
ERROR	1689.3584	4262	0.3964				0.1514
HZ	10.6845	2	5.3422	13.5571	0.0000		
ERROR	1678.6739	4260	0.3941				0.1568

MODEL 2: S.A.T. PLUS H.S. G.P.A.

********** ANALYSIS OF COVARIANCE TABLE **********

DEPENDENT VARIABLE F.Y.GPA*

SOURCE	SUM OF SQUARES	NDF	MEAN SQUARE	F RATIO	PROBABILITY OF LARGER F	CONTRIBUTION TO R. SQ.	R SQUARE
TOTAL	28639.0495	4266					
MEAN	26648.3277	1	26648.3277	57092.4155	0.0		
ERROR	1990.7218	4265	0.4668				
HEAR/NOT	57.7444	1	57.7444	159.9287	0.0000	0.0290	
Z	445.4118	3	148.4706	411.2037	0.0	0.2237	
ERROR	1538.4909	4261	0.3611				0.2272
HZ	13.0440	3	4.3480	12.1366	0.0000		
ERROR	1525.4469	4258	0.3583				0.2337

Model A (SAT only)

Mean = .53 S.D. = .70
Lowest value = -1.77 Highest value = 2.00

Here the extreme values are farther apart than for Schools A and C, the mean is larger, almost equal to one standard deviation for the control group.

Model B (SAT plus H.S.GPA)

Mean = .58 S.D. = .68
Lowest value = -1.84 Highest value = 2.01

This model fits even worse than that with SAT only, probably a further indication of noncomparability.

3. Correlation of residuals with predictors not in Model B. For completeness the following list of significant correlations is provided from Table V-9.

Variable	Description
SDQ #24	Highest level of education planned
SDQ #48	Self-rating in artistic ability
SDQ #51	Self-rating in getting along with others
SDQ #12H	Number of honors in high school
SDQ #18A	Number of advanced placements
SDQ #50	Self-rated creative writing
SDQ #58	Self-rated scientific ability
Hearing-Scaled	Understanding of speech as scaled by School B

Since the slopes of the regression lines are not parallel all that can be said about the correlations is that they are related to possible incorrect prediction, using the regression line from School C.

F. Comparison between the entire hearing group and the entire handicapped group at School C.

TABLE V-9

CORRELATION OF RESIDUALS FROM THE EQUATION
FOR THE CONTROL SAMPLE (MODEL B) WITH
PREDICTORS OF PERFORMANCE OF THE
HANDICAPPED AT SCHOOL B

ALL CORRELATIONS AND ACCOMPANYING SIGNIFICANCES:

	SDQ#4:	SDQ#20:	SDQ#21:	SDQ#22:	SDQ#24:	SDQ#44A	SDQ#45A	SDQ#46A	SDQ#47:	SDQ#48:	SDQ#49:	SDQ#51:	SDQ#52:	SDQ#54:	SDQ#57:
N	165.000	162.000	165.000	168.000	166.000	169.000	169.000	169.000	161.000	161.000	161.000	160.000	161.000	160.000	159.000
CORREL.	0.004	-0.019	-0.029	0.021	-0.137	-0.063	-0.077	-0.124	0.079	0.143	0.017	0.136	0.020	-0.084	-0.090
PROBAB.	0.478	0.406	0.355	0.392	0.038	0.205	0.159	0.052	0.157	0.034	0.417	0.042	0.398	0.145	0.129

	SDQ#5:	SDQ#12:	SDQ#12H	SDQ#18A	SDQ#23:	SDQ#50:	SDQ#53:	SDQ#56:	SDQ#58:	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-M	TSWE
N	149.000	169.000	169.000	169.000	167.000	161.000	161.000	159.000	159.000	160.000	159.000	161.000	206.000	206.000	204.000
CORREL.	0.059	-0.110	-0.219	-0.207	-0.024	-0.141	0.003	0.045	-0.140	-0.080	-0.100	-0.182	-0.349	-0.183	-0.255
PROBAB.	0.235	0.076	0.002	0.003	0.380	0.036	0.483	0.286	0.038	0.156	0.104	0.010	0.000	0.004	0.000

	AGE	SEX	RACE	ED.LEV.	OCC.LEV	ONSET	HEAR(0-1)	HEAR-D.	STNF.-T	CAL. RDG.	F.Y.GPA
N	43.000	206.000	166.000	145.000	123.000	202.000	206.000	161.000	114.000	162.000	206.000
CORREL.	0.228	0.091	-0.026	-0.025	-0.025	0.001	-0.035	-0.146	0.054	0.040	0.862
PROBAB.	0.066	0.095	0.367	0.382	0.390	0.495	0.309	0.031	0.283	0.307	0.0

1. The Gulliksen-Wilkes method, using analysis of covariance. In order to get more nearly similar conditions for the hearing and handicapped groups at School C we restricted the samples in the previous findings of this chapter to those who had reported scores to this institution as found on College Board files. These are the individuals presumably using the SAT scores as a factor in seeking entrance into college. However, other students take the SAT and never report scores or else get a score report requested only for themselves.

It seemed desirable to make an additional comparison using both the score-reporters and the nonreporters from Institution C. The control sample was then 4170 cases and the deaf sample, 150 cases. The Gulliksen-Wilks method was used with the following results. The accompanying table, Table V-10, gives slightly more detail. The regression results for the expanded control sample may be found in Appendix C. The expanded sample for the handicapped (N=150), was also used in the within-school regression for School C described in Chapter 4 but was not used in the other model comparisons (N=68).

Model A: SAT scores only	F value (d.f.)	Significance
Homogeneity of variance	1.33 (4367,147)	.0123
Parallelism of slopes	1.24 (2,4314)	.289
Equality of intercept	10.03 (1,4316)	.002

Model B: SAT scores & H.S.GPA	F value (d.f.)	Significance
Homogeneity of variance	1.31 (4366,146)	.018
Parallelism of slopes	1.58 (3,4312)	.193
Equality of intercept	10.13 (1,4315)	.002

TABLE V-10

ANALYSIS OF COVARIANCE TESTS FOR DIFFERENCES
IN PREDICTION SYSTEMS FOR ENTIRE HEARING VS.
ENTIRE DEAF SAMPLES AT SCHOOL C

MODEL 1: S.A.T. ONLY

********** ANALYSIS OF COVARIANCE TABLE **********

DEPENDENT VARIABLE F.Y.GPA*

SOURCE	SUM OF SQUARES	NDF	MEAN SQUARE	F RATIO	PROBABILITY OF LARGER F	CONTRIBUTION TO R. SQ.	R SQUARE
TOTAL	28862.1092	4320					
MEAN	26855.8336	1	26855.8336	57813.7650	0.0		
ERROR	2006.2756	4319	0.4645				
HEAR/NOT	3.9223	1	3.9223	10.0311	0.0016	0.0020	
Z	318.0005	2	159.0002	406.6347	0.0	0.1585	
ERROR	1687.6203	4316	0.3910				0.1588
NZ	0.9713	2	0.4856	1.2421	0.2889		
ERROR	1686.6490	4314	0.3910				0.1593

MODEL 2: S.A.T. PLUS H.S. G.P.A.

********** ANALYSIS OF COVARIANCE TABLE **********

DEPENDENT VARIABLE F.Y.GPA*

SOURCE	SUM OF SQUARES	NDF	MEAN SQUARE	F RATIO	PROBABILITY OF LARGER F	CONTRIBUTION TO R. SQ.	R SQUARE
TOTAL	28862.1092	4320					
MEAN	26855.8336	1	26855.8336	57813.7650	0.0		
ERROR	2006.2756	4319	0.4645				
HEAR/NOT	3.5992	1	3.5992	10.1282	0.0015	0.0018	
Z	472.2156	3	157.4052	442.9380	0.0	0.2354	
ERROR	1533.4051	4315	0.3554				0.2357
NZ	1.6820	3	0.5607	1.5783	0.1925		
ERROR	1531.7231	4312	0.3552				0.2365

Since in both models the data failed the test of homogeneity of variance, there is some uncertainty as to the interpretation of these results. Furthermore, the significance of the difference in intercepts found in both models was not improved for Model B. However, since some writers, such as Keppel, previously cited, have argued that analysis of variance results are rather robust under a violation of assumption of homogeneity of variance (in the above tables the violations are severe) we have also used the Belson method and correlated the residuals as before.

2. The Belson method: calculation of residuals for School C from the regression equation for the controls in School C (entire samples used). The frequency distribution and other statistics for the residuals in these comparisons show the following:

Model A (SAT only)

Mean = .17 S.D. = .54
Lowest value = -1.33 Highest value = 1.43

Given the mean residual is postive there is underprediction using this method. The mean, however, is only about 1/4 of the standard deviation of the corresponding control group; this compares with a ratio of 1/5 for the corresponding statistic for the restricted samples. The underprediction is apparently not severe.

Model B (SAT plus H.S.GPA)

Mean = .17 S.D. = .53
Lowest value = -1.40 Highest value = 1.44

The results here are similar to those for Model A.

3. Correlations of residuals with predictors not in Model B. As before we may correlate the residuals with the predictors

available for School C, using actual N available for each predictor. Table V-11 shows these N's, correlations and significance. The following predictors are significant (positive correlation, or underprediction, indicated by "-", negative correlation or overprediction by "+"):

Variable	Description
SDQ #49 (-)	Self-rating on athletic ability
SDQ #50 (+)	Self-rating on creative writing
SDQ #56 (-)	Self-rating on organizing work
SDQ #60 (+)	Self-rating on written expression
TSWE (+)	Test of Standard Written English
Sex (-)	Male = 1, Female = 2

It is a confirmation of the earlier comparison with the samples restricted to score-reporters that identical variables correlate with residuals in the same direction as before. The only exception is sex (slightly underpredicted for women). As before, self-rating on writing skills overpredicts college grades but these grades are underpredicted by self-ratings in athletic ability and organizing work.

G. Summary of findings. This chapter has helped answer the research queries posed at the beginning by indicating that:

(1) The College Board SAT (verbal and mathematical tests considered together) does predict college success with the same accuracy for hearing and nonhearing impaired students for Institution C, where the deaf are mainstreamed, provided that only score-reporting groups are compared.

TABLE V-11

CORRELATION OF RESIDUALS FROM THE EQUATION FOR THE ENTIRE CONTROL SAMPLE (MODEL B) WITH PREDICTORS OF PERFORMANCE FROM THE ENTIRE HANDICAPPED SAMPLE AT SCHOOL C

ALL CORRELATIONS AND ACCOMPANYING SIGNIFICANCES:

	SDQ84:	SDQ820:	SDQ821:	SDQ822:	SDQ824:	SDQ844A	SDQ845A	SDQ846A	SDQ847:	SDQ848:	SDQ849:	SDQ851:	SDQ852:	SDQ854:	SDQ857:
N	63.000	61.000	63.000	61.000	61.000	65.000	65.000	65.000	61.000	63.000	63.000	64.000	63.000	63.000	62.000
CORREL.	0.143	0.111	0.156	-0.108	-0.142	0.084	-0.029	0.166	-0.186	-0.002	0.301	0.173	0.020	0.132	0.170
PROBAB.	0.128	0.192	0.108	0.199	0.133	0.250	0.409	0.090	0.072	0.495	0.007	0.083	0.437	0.147	0.090

	SDQ85:	SDQ812:	SDQ812H	SDQ818A	SDQ823:	SDQ850:	SDQ853:	SDQ856:	SDQ858:	SDQ859:	SDQ860:	H.S.GPA	SAT-V	SAT-M	TSWE
N	59.000	65.000	65.000	65.000	62.000	63.000	63.000	63.000	63.000	64.000	63.000	62.000	150.000	150.000	68.000
CORREL.	-0.110	-0.134	-0.179	0.005	-0.077	-0.446	-0.001	0.276	0.099	-0.153	-0.211	-0.144	-0.090	0.010	-0.257
PROBAB.	0.199	0.140	0.074	0.486	0.272	0.000	0.497	0.013	0.216	0.109	0.046	0.127	0.135	0.450	0.016

	AGE	SEX	RACE	ONSET	HEAR(0-1)	H.S.GPA	CUM.GPA	F.Y.GPA
N	68.000	150.000	137.000	140.000	70.000	136.000	80.000	150.000
CORREL.	0.013	0.156	0.011	-0.135	-0.022	0.246	0.740	0.865
PROBAB.	0.458	0.027	0.448	0.054	0.427	0.002	0.0	0.0

(2) When high school grade point average, as measured by the SDQ responses, is added to the prediction scheme the lack of bias still holds for score-reporting groups.

(3) When total groups, including nonscore-reporters are compared, there may be a slight underprediction of the deaf group but because of inhomogeneity of variance between the two groups the picture is not clear.

Chapter VI

Analyses of Persistence

A. Introduction and rationale.

1. Purpose and research questions. Besides college grade point average, another important criterion of success is college persistence. In this chapter we ask "What are the predictors of persistence through the first two years of college?" This question is addressed only for the handicapped samples in this report. A further question is "Are there any differences among the handicapped in the three schools of the study in regard to persistence?"

2. Definition of persistence. Persistence is categorized as follows:

(1) Any student on the college records for a total of 4 consecutive semesters (2 years), or an equivalent amount of time, is counted as a persister.

(2) Any student who drops out of college during the first four consecutive semesters and does not reenter is counted as a nonpersister; if he drops out and then reenrolls he is still counted as a persister so long as he is registered for a total of 2 years during the study period (this happened only for a handful of cases). To avoid complications all transfer students were excluded and duplicate cases of 4 students found on the roll of two institutions were excluded from one of them.

(3) If the student entered college at a time so late that it would be impossible for him to stay 2 years before the data collection was over he was excluded from the analysis. The data collection period for data, including persistence information, for Schools A and B ended in the spring of 1983 (all possible data before that time which matched College Board SAT files for the period 1977-1983 inclusive was included). For School C the data collection period for data from the school ended in the spring of 1984 (data from the College Board files was included for 1977-1983 as before). The older handicapped sample for the years 1970-1979, which had persistence information as well as school-supplied SAT scores and FYA, was also included.

3. Extent of persistence. Persistence statistics for the handicapped samples from the three schools are as follows:

(1) School A: 27 persisters or 75% of usable cases; 9 nonpersisters or 25% of usable cases; 8 cases indeterminate as above (omitted from analysis)

(2) School B: 164 persisters or 83% of usable cases; 33 nonpersisters or 17% of usable cases; 6 cases indeterminate (omitted)

(3) School C: 90 persisters or 77% of usable cases; 27 nonpersisters or 23% of usable cases; 33 cases indeterminate (omitted)

4. Procedure. Unlike college grade point average persistence/nonpersistence, together with school membership, can be considered on the same scale over all schools, not subject to variations

in scale among schools or between hearing and handicapped groups. Both persistence and school membership are polytomous. Consequently, an appropriate analytical procedure is discriminant analysis. This is done by entering variables stepwise until the contribution of any added variable does not add to the significance of the set beyond the .05 significance level. Only variables common to all schools are used.

Since there are so many of these predictors relative to the sample size the number of variables is reduced still further. In the initial base for the school x persistence discriminant analyses only those variables are employed which had either a significant school or a significant peristence effect in the school x persistence analyses of variance. In the within-school and persistence-only analyses which follow, only those variables with a significant persistence effect were included in the initial base. The variables sex, race and deaf (> 60 db. loss) vs. hard-of-hearing ($\leq$ 60 db. loss) are themselves dichotomous. Because discriminant analyses demand continuous variables, these three are treated via X^2 contingency table tests.

B. Reduction of number of predictors for discriminant analyses.

1. The use of school x persistence analyses of variance. As previously explained, the number of predictors for the discriminant analyses, especially for the persistence x school discriminant analyses, is large for the amount of data available. Consequently, a decision was made to consider only those

variables likely to discriminate. This variable reduction was carried out via two factor (school x persistence) univariate analyses of variance. An interaction term was also included in the model. Only those variables with a significant main effect ($p \sim .05$ or less) were included in the discriminant analyses. Interactions were ignored (only one was significant). Following is a table of significant variables that were included as initial data in the school x persistence discriminant analysis.

Table VI-1

Variables Included Initially in Discriminant Analyses

Variable	Description	Significance	
		Persistence	School
S.D.Q. #4	Size of high school class	.0553	.9860
S.D.Q. #20	Participation in community or church groups in high school	.0480	.9953
S.D.Q. #22	Participation in clubs in high school	.1899	.0008
S.D.Q. #24	Highest level of education planned to complete	.4552	.0011
S.D.Q. #44A	Number of areas in which assistance is desired in college	.0175	.6953
S.D.Q. #45A	Number extra-curricular activities in high school	.0267	.1901
S.D.Q. #49	Self-rating on athletic ability	.2967	.0089
S.D.Q. #54	Self-rating on mechanical ability	.5017	.0003
S.D.Q. #5	High school class rank	.7988	.0564
S.D.Q. #12	Number of A grades in high school	.6464	.0170
S.D.Q. #23	Number of honors or awards in high school	.0018	.2206
S.D.Q. #50	Self-rating in creative writing	.2207	.0363
S.D.Q. #53	Self-rating in mathematics	.7035	.0355
S.D.Q. #60	Self-rating in written expression	.2270	.0587
H.S.GPA	High school grade point average from S.D.Q. responses	.6146	.0292
SAT-V	SAT Verbal score	.2733	.0002
SAT-M	SAT Mathematics score	.0154	.0035
TSWE	Test of Standard Written English	.2784	.0010
Age of onset	Age of onset of deafness	.3426	.0053

2. Chi-square analyses of discrete independent variables. Sex, age and hard of hearing (hearing loss less than 60 decibels) vs. deaf (loss greater than 60 decibels) could also possibly be predictors of persistence or school membership. However, since the theory of discriminant analysis allows only normally distributed variables, these three variables were placed in 2 x 2 contingency tables. These tables were then tested for significance using a chi-square test.

The pattern of the contingency tables was to have persistence/nonpersistence as the columns and the variable dichotomy (men vs. women, minority vs. Caucasian and deaf vs. hard of hearing) as the rows, respectively. This gave a total of 3 2 x 2 tables for each school and 1 over all schools. None of these variables predicted persistence well for any school or for all schools, i.e., none of the resulting probabilities were significant.

C. Persistence x school stepwise discriminant analyses.

1. General procedure. The 19 continuous variables listed in the preceding table were entered as baseline data into the computer program DISCRIM (in SPSS-X, Statistical Package for the Social Sciences). The program made a forward stepwise selection of all variables provided the F-test for additional contribution gave a significant probability of .05 or less. There were 6 persistence by school groups as follows: (1) School A, nonpersister, (2) School A, persister, (3) School B, nonpersister, (4) School B, persister, (5) School C, nonpersister, (6) School C, persister. Thus there could be a maximum of 5 discriminant

functions. However, the program uses only those with a significant value of Wilks' lambda. It then proceeds to give discriminant and structural coefficients by variable and group, to give group centroids and to reclassify cases according to the discriminant functions found with a percent correct classification for each group.

2. Selection of variables. The variables finally selected for this 6-group analyses were as follows in order of entry:

Variable	Description
S.D.Q. #22	Participation in clubs in high school
S.D.Q. #24	Highest level of education planned to complete
S.D.Q. #54	Self-rated mechanical ability
S.D.Q. #23	Number of honors or awards in high school
S.D.Q. #12	Number of A grades in high school
S.D.Q. #53	Self-rated mathematical ability
S.D.Q. #50	Self-rated creative writing ability
S.D.Q. #49	Self-rated athletic ability
S.D.Q. #4	Size of high school class
Age of deafness onset	Age of onset of deafness
S.D.Q. #44	Number of areas in which help is requested outside of school

3. Discriminant functions and coefficients.

   a. The discriminant functions. Three significant discriminant functions were found for this analysis. They are given in Table VI-2 together with the raw discriminant function weights for each group. Table VI-2 also provides the structure coefficients (correlations between the final discriminant function coefficients in the transformed space and the original variables) and the functions evaluated at the group centroids.

TABLE VI-2

DISCRIMINANT FUNCTIONS, SIGNIFICANCES, STRUCTURE
COEFFICIENTS AND CANONICAL DISCRIMINANT
FUNCTIONS EVALUATED AT GROUP CENTROIDS
FOR SCHOOL X PERSISTENCE ANALYSIS

SUMMARY TABLE

STEP	ACTION ENTERED	ACTION REMOVED	VARS IN	WILKS' LAMBDA	SIG.	LABEL
1	S.D.Q. #22		1	0.815906	0.0000	PARICIPATION IN CLUBS IN HIGH SCHOOL
2	S.D.Q. #24		2	0.736672	0.0000	HIGHEST LEVEL OF EDUCATION PLANNED TO COMPLETE
3	S.D.Q. #54		3	0.662613	0.0000	SELF-RATING ON MECHANICAL ABILITY
4	S.D.Q. #23		4	0.596387	0.0	NUMBER OF HONORS OR AWARDS (PRIMARILY ACADEMIC) RECEIVED IN HIGH SCHOOL
5	S.D.Q. #12		5	0.516650	0.0	NUMBER OF SUBJECT AREAS IN HIGH SCHOOL IN WHICH A GRADES WERE REPORTED
6	S.D.Q. #53		6	0.484894	0.0	SELF-REPORTED ABILITY IN MATHEMATICS
7	S.D.Q. #50		7	0.461082	0.0	SELF-REPORTED ABILITY IN CREATIVE WRITING
8	S.D.Q. #49		8	0.443039	0.0	SELF-RATING ON ATHLETIC ABILITY
9	S.D.Q. #4		9	0.425929	0.0	SIZE OF HIGH SCHOOL CLASS
10	ONSET		10	0.409937	0.0	AGE OF ONSET OF DEAFNESS
11	S.D.Q. #44		11	0.396118	0.0	NUMBER OF AREAS OUTSIDE REGULAR COURSE WORK IN WHICH ASSISTANCE DESIRED IN COLLEGE

CLASSIFICATION FUNCTION COEFFICIENTS
(FISHER'S LINEAR DISCRIMINANT FUNCTIONS)

GROUP =	1	2	3	4	5	6
S.D.Q. #4	2.330276	3.601994	2.957874	3.173614	3.337766	3.342397
S.D.Q. #22	3.427059	4.980357	4.227549	4.243286	6.302094	4.944475
S.D.Q. #24	2.789727	3.029611	2.419172	2.425526	2.654900	3.035977
S.D.Q. #44	1.269680	.7807391	1.277535	1.004393	1.186306	.9125184
S.D.Q. #49	1.109730	.9560897	1.726751	1.289707	2.125729	1.566922
S.D.Q. #54	1.761857	1.722771	2.443346	2.849604	2.414609	1.999331
S.D.Q. #12	-1.240075	-2.179842	-2.626466	-2.273895	-3.199883	-1.853363
S.D.Q. #23	.8575165	1.659555	2.765078	1.688013	3.892721	1.418891
S.D.Q. #50	3.256520	2.967597	2.376376	2.167132	2.420548	1.951027
S.D.Q. #53	2.722203	1.864872	2.467616	2.725126	1.414579	2.553875
ONSET AGE	-.1842234	.1908364	-.4260616D-01	.5238961D-01	.1974778	.2049913
(CONSTANT)	-26.95297	-30.27631	-30.62115	-28.81038	-38.57675	-31.13090

CANONICAL DISCRIMINANT FUNCTIONS

FUNCTION	EIGENVALUE	PERCENT OF VARIANCE	CUMULATIVE PERCENT	CANONICAL CORRELATION	AFTER FUNCTION	WILKS' LAMBDA	CHI-SQUARED	D.F.	SIGNIFICANCE
					0	0.3961176	315.32	55	0.0000
1*	0.52883	48.29	48.29	0.5881378	1	0.6055974	170.77	40	0.0000
2*	0.37746	34.47	82.75	0.5234764	2	0.8341878	61.732	27	0.0002
3*	0.10294	9.40	92.15	0.3054998	3	0.9200569	28.370	16	0.0285
4*	0.07305	6.67	98.82	0.2609154	4	0.9872669	4.3635	7	0.7371
5*	0.01290	1.18	100.00	0.1128412					

TABLE VI-2 (CONCLUDED)

DISCRIMINANT FUNCTIONS, SIGNIFICANCES, STRUCTURE COEFFICIENTS AND CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP CENTROIDS FOR SCHOOL X PERSISTENCE ANALYSIS

STRUCTURE COEFFICIENTS:

POOLED WITHIN-GROUPS CORRELATIONS BETWEEN CANONICAL DISCRIMINANT FUNCTIONS AND DISCRIMINATING VARIABLES
VARIABLES ARE ORDERED BY THE FUNCTION WITH LARGEST CORRELATION AND THE MAGNITUDE OF THAT CORRELATION.

	FUNC 1	FUNC 2	FUNC 3	FUNC 4	FUNC 5
S.D.Q. #22	0.62154*	0.16315	0.25907	-0.09652	0.53556
S.D.Q. #23	0.55202*	-0.19702	0.06841	-0.27108	-0.16534
S.D.Q. #45	0.30961*	0.09352	0.06576	-0.22778	0.21426
S.D.Q. #20	0.14571*	0.08375	0.03201	0.01936	0.03557
S.D.Q. #24	0.14798	0.52043*	0.09582	-0.22306	-0.04143
S.D.Q. #12	0.03130	0.44033*	0.15201	-0.41873	0.29176
TSWE SCORE	0.11959	0.23611*	-0.17458	-0.00295	0.14207
S.D.Q. #50	0.26042	-0.00166	-0.56268*	0.01255	0.30230
S.D.Q. #49	0.02390	-0.28478	0.47126*	-0.21352	-0.03022
S.D.Q. #53	-0.29720	-0.04467	0.44320*	-0.30673	-0.08379
S.D.Q. #60	0.23310	0.09149	-0.28458*	-0.08436	0.16495
SAT-V	0.05985	0.15774	-0.16424*	0.05789	0.15003
SAT-M	-0.12695	0.13226	0.13278*	-0.03829	0.04448
S.D.Q. #44	0.18083	-0.18797	0.02931	-0.43273*	-0.00725
H.S. G.P.A.	0.03369	0.30490	0.12337	-0.36028*	0.21711
S.D.Q. #5	0.16697	0.18934	0.05264	-0.29775*	0.18736
ONSET AGE	0.18808	0.22809	0.12416	0.25924*	0.12147
S.D.Q. #54	-0.33460	-0.40859	0.25305	0.19433	0.52856*
S.D.Q. #4	-0.07690	0.15351	0.18105	0.45286	-0.51870*

CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP MEANS (GROUP CENTROIDS)

GROUP	FUNC 1	FUNC 2	FUNC 3	FUNC 4	FUNC 5
1	-0.59164	0.51477	-1.04517	-1.09561	0.33749
2	0.61408	0.91910	-0.74608	0.44721	-0.09238
3	0.24768	-0.80665	-0.15642	-0.38020	-0.26354
4	-0.51791	-0.32434	0.01555	0.12775	0.03645
5	2.12424	-0.69235	0.11820	0.03044	0.15265
6	0.09060	0.76729	0.32190	-0.12712	-0.02163

b. Correlations with the original variables. An examination of the structure matrix shows certain predictors marked with an asterisk for each of the five discriminant functions. These variables are the ones that show a larger correlation with that particular function than with any other function. For the first function S.D.Q.#22 (participation in clubs), S.D.Q.#23 (number of honors/awards in high school) and S.D.Q.#20 (participation in community or church groups in high school) all have large positive coefficients. Function 1 then seems to represent participation in activities in general. However, examination of the function evaluated at the group centroids indicates that only for School A is the centroid higher algebraically for the persisters than for the nonpersisters. Consequently, particiaption seems to go with leaving college within the first two years, except for School A.

Similarly, function 2 apparently represents academic inclination. Postive correlations larger than .3 may be found with S.D.Q. #24 (highest level of education planned), S.D.Q.#12 (number of A grades reported in high school) and high school grade point average. A negative coefficient of -.41 of this function with S.D.Q. #54 (self-rating on mechanical ability), not often thought of as academic, is consistent with this interpretation. A look at the group centroids shows that persisters always have larger values

algebraically than non-persisters, so that it is the persisters who are more academically inclined.

The third function, which has high positive correlations with S.D.Q.#49 (self-rating on athletic ability) and S.D.Q.#53 (self-reported ability in mathematics) and negative correlations with writing skills (S.D.Q.#50, S.D.Q.#60, TSWE and SAT-V) may indicate a desire for vocational rather than liberal arts skills. The negative correlations with a postively-oriented function (group means are higher for persisters) would favor this interpretation.

c. Evaluation at centroids. Evaluation at group centroids implies an overall average of all chosen variables, weighted by the coefficients of the given discriminant function. Thus there is a value for each group for each function. If the first discriminant function implies degree of participation then group 1 (School A dropouts) and group 4 (School B persisters) participate the least whereas group 2 (School A persisters) and group 5 (School C dropouts) participate most in extracurricular activities. The interpretation of the second function as striving for academic excellence is clearer: the odd-numbered groups 1, 3 and 5 (which represent dropouts) always have considerably lower values than the corresponding persisters (groups 2, 4 and 6), for each school. The separation is clearest for School C. The evaluation of the first two discriminant

functions (which account for 83% of the explained variance) at the group centroids, together with the associated cases for each group, is the basis for an all-groups scatterplot (Figure 2). The group centroids for each group are designated by the letters A-F and the corresponding individual cases by ordinary numbers. Only classifiable cases are considered.

d. Prediction of group membership. The classification results of Table VI-3 show an overall correct classification of cases of 60% based on the discriminant functions found.

D. Stepwise discriminant analysis by persistence only--total group.

1. Initial baseline variables. In this and the remaining discriminant analyses, since only persistence is considered, the six variables used as a base are those showing a persistence effect in the two-way analyses of variance in Section B of this chapter. These are:

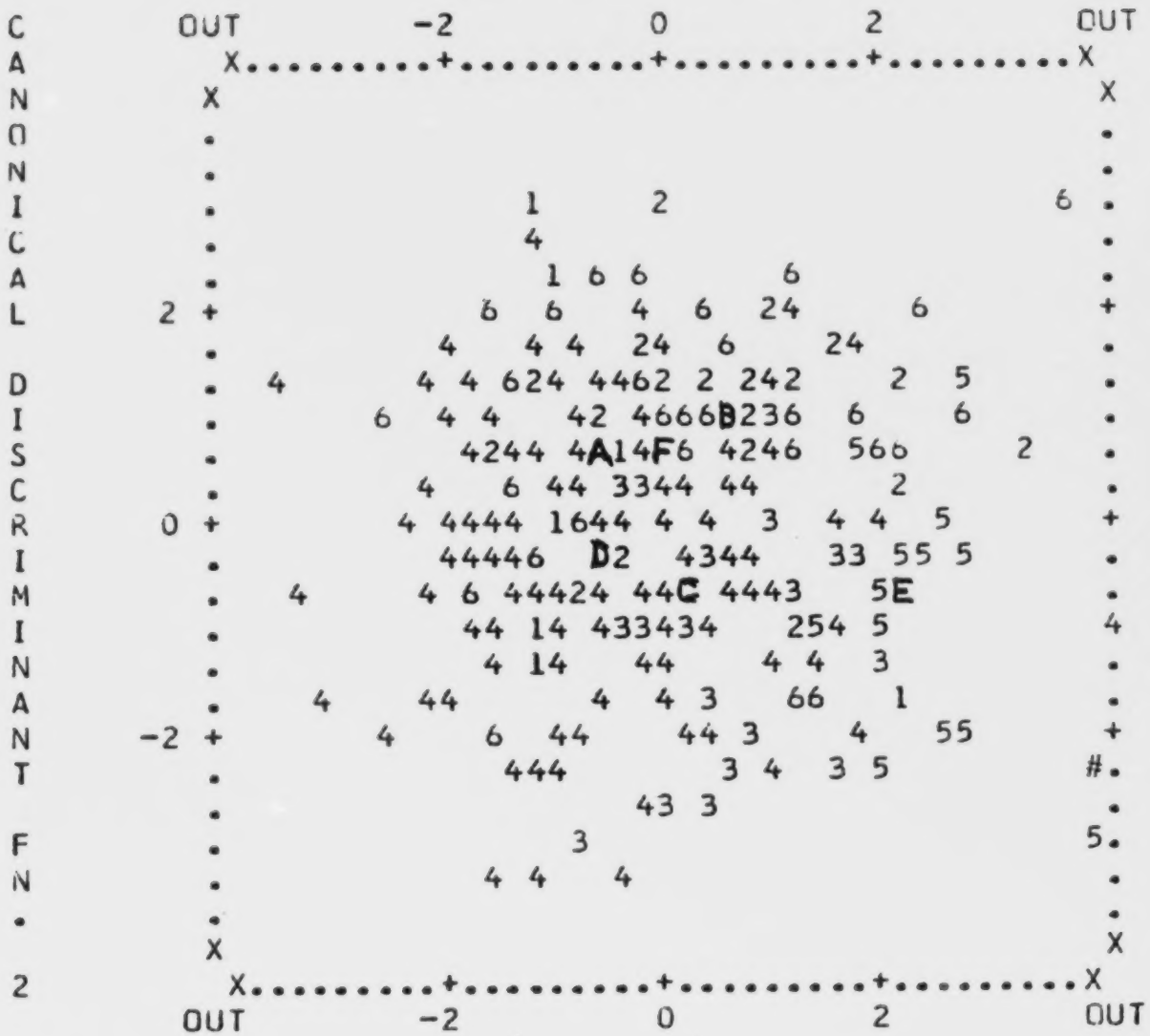
Variable	Description
S.D.Q. #4	Size of high school class
S.D.Q. #20	Participation in community or church groups in high school
S.D.Q. #44A	Number of areas in which assistance is desired in college
S.D.Q. #45A	Number of extra-curricular activities in high school
S.D.Q. #23	Number of honors or awards in high school
SAT-M	SAT Mathematics score

2. Selection of variables by the stepwise procedure. The above 6 variables were entered as the initial set, using the SPSS-X program DISCRIM. Only forward selection was allowed as before,

FIGURE 2#

ALL-GROUPS SCATTERPLOT

CANONICAL DISCRIMINANT FUNCTION 1



#NOTE: GROUP CENTROIDS ARE DESIGNATED BY LETTERS:
A = GROUP 1, B = GROUP 2, C = GROUP 3,
D = GROUP 4, E = GROUP 5, F = GROUP 6.

TABLE VI-3

PREDICTIONS FOR SCHOOL X

PERSISTENCE ANALYSIS

CLASSIFICATION RESULTS -

ACTUAL GROUP	NO. OF CASES	PREDICTED GROUP MEMBERSHIP 1	2	3	4	5	6
GROUP 1	9	5 55.6%	0 0.0%	0 0.0%	1 11.1%	1 11.1%	2 22.2%
GROUP 2	27	2 7.4%	13 48.1%	0 0.0%	3 11.1%	3 11.1%	6 22.2%
GROUP 3	33	3 9.1%	4 12.1%	17 51.5%	4 12.1%	4 12.1%	1 3.0%
GROUP 4	164	19 11.6%	15 9.1%	22 13.4%	86 52.4%	4 2.4%	18 11.0%
GROUP 5	27	0 0.0%	1 3.7%	1 3.7%	0 0.0%	23 85.2%	2 7.4%
GROUP 6	90	5 5.6%	5 5.6%	3 3.3%	7 7.8%	4 4.4%	66 73.3%
UNGROUPED CASES	32	10 31.3%	5 15.6%	3 9.4%	1 3.1%	9 28.1%	4 12.5%

PERCENT OF "GROUPED" CASES CORRECTLY CLASSIFIED: 60.00%

with the requirement that the significance level should be .05 or less, using Wilks' lambda. The variables selected for the persistence/nonpersistence sample for Schools A, B and C combined were as follows, in order of entry:

Variable	Description
S.D.Q. #23	Number of honors/awards in high school
S.D.Q. #44	Number of areas in which assistance is desired in college
S.D.Q. #20	Participation in community or church groups in high school
SAT-M	SAT Mathematics score
S.D.Q. #4	Size of high school class

3. Discriminant functions and coefficients. The single possible function has fairly high correlations with all the variables selected. The structural coefficients, as before, show the correlations with the original variables. Correlations with S.D.Q.#23 (number of honors or awards in high school) and S.D.Q.#44 (number of areas in which assistance is desired in college) and S.D.Q.#20 (participation in community or church groups in high school) are positive. Correlation with S.D.Q.#45 (number of extra curricular activities in high school), a variable not selected from the original 6, is also positive. The structural coefficients for S.D.Q.#4 (size of high school class) and SAT-M are negative. Upon examining the group centroids we see that the centroid for the nonpersisters is algebraically larger than that for the persisters. Consequently, postivie correlations--number of awards, number of areas in which help is desired and number of high school outside

activities--are associated with nonpersistence. The variables with negative correlations--level of SAT Mathematics score and extent of class size in high school--are associated with persistence. The group centroids are quite well separated. Table VI-4 shows these results.

4. Classification. Figure 3 shows the centroid for each group in terms of the classification found; 79% of the grouped cases (those actually used in the discriminant analyses) were classified correctly.

E. Stepwise discriminant analysis of persistence--School A only.

1. Selection of variables. Using the 6 variables data base described for the previous section, the initial attempt at selection failed to produce a non-zero correlation of the function with the variable selected. Consequently, the stepwise procedure was later abandoned and all 6 predictors were entered directly. The resulting discriminant function was not significant. However, since these 6 variables were initially selected by the analyses of variance the results are reported as before. From other stepwise trials it was inferred that only the first two structure coefficients are stable.

2. Discriminant function and coefficients. The function has a high positive correlation with class size in high school and a high negative correlation with SAT-M. Since the group centroid for the persisters is algebraically less than that for the persisters the implication seems to be that, as in the case of the all-schools analysis, persistence is associated with large

TABLE VI-4

DISCRIMINANT FUNCTIONS, SIGNIFICANCES, STRUCTURE
COEFFICIENTS AND CANONCIAL DISCRIMINANT
FUNCTIONS EVALUATED AT GROUP CENTROIDS
FOR ALL-SCHOOLS PERSISTENCE ANALYSIS

SUMMARY TABLE

STEP	ACTION ENTERED	ACTION REMOVED	VARS IN	WILKS' LAMBDA	SIG.	LABEL
1	S.D.Q.#23		1	0.903696	0.0000	NUMBER OF HONORS OR AWARDS (PRIMARILY ACADEMIC) IN HIGH SCHOOL
2	S.D.Q.#44		2	0.868728	0.0000	NUMBER OF AREAS OUTSIDE REGULAR COURSE WORK IN WHICH ASSISTANCE IS DESIRED IN COLLEGE
3	S.D.Q.#20		3	0.850719	0.0000	PARTICIPATION IN COMMUNITY OR CHURCH GROUPS IN HIGH SCHOOL
4	SAT-M		4	0.835916	0.0000	SAT MATHEMATICS SCORE
5	S.D.Q.#4		5	0.825919	0.0000	SIZE OF HIGH SCHOOL CLASS

CLASSIFICATION FUNCTION COEFFICIENTS
(FISHER'S LINEAR DISCRIMINANT FUNCTIONS)

IGR =	1	2
S.D.Q. #4	2.333401	2.608093
S.D.Q. #20	2.313798	1.934977
S.D.Q. #44	1.448121	1.159898
S.D.Q. #23	2.910510	1.923177
SAT-M	.3370181	.3714004
(CONSTANT)	-19.15011	-17.52887

CANONICAL DISCRIMINANT FUNCTIONS

FUNCTION	EIGENVALUE	PERCENT OF VARIANCE	CUMULATIVE PERCENT	CANONICAL CORRELATION	AFTER FUNCTION	WILKS' LAMBDA	CHI-SQUARED	D.F.	SIGNIFICANCE
					0	0.8259193	66.080	5	0.0000
1*	0.21077	100.00	100.00	0.4172298					

* MARKS THE 1 CANONICAL DISCRIMINANT FUNCTION(S) TO BE USED IN THE REMAINING ANALYSIS.

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TABLE VI-4 (CONCLUDED)

DISCRIMINANT FUNCTIONS, SIGNIFICANCES, STRUCTURE COEFFICIENTS AND CANONCIAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP CENTROIDS FOR ALL-SCHOOLS PERSISTENCE ANALYSIS

STRUCTURE COEFFICIENTS:

POOLED WITHIN-GROUPS CORRELATIONS BETWEEN CANONICAL DISCRIMINANT FUNCTIONS AND DISCRIMINATING VARIABLES
VARIABLES ARE ORDERED BY THE FUNCTION WITH LARGEST CORRELATION AND THE MAGNITUDE OF THAT CORRELATION.

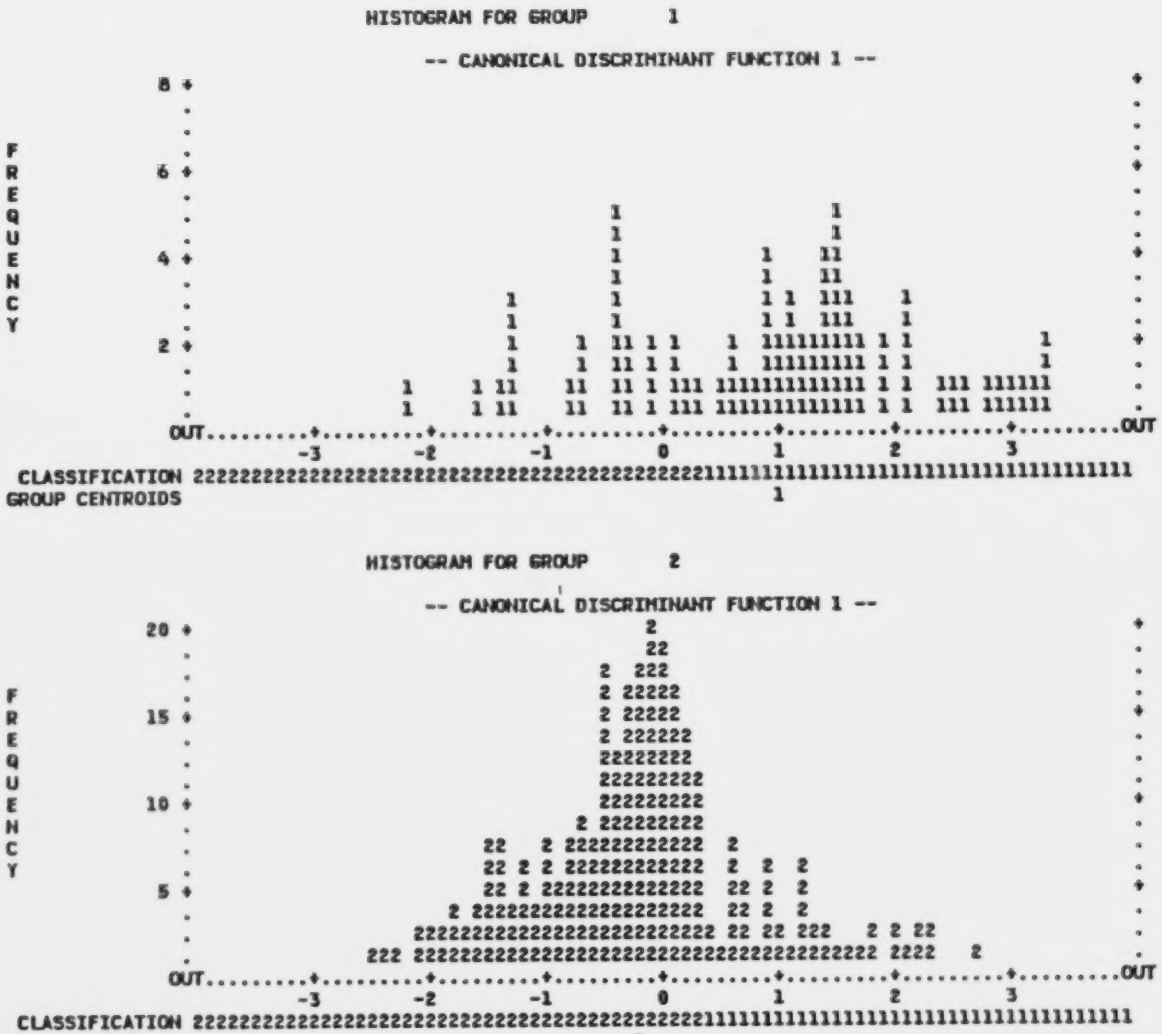
	FUNC 1
S.D.Q. #23	0.71106
S.D.Q. #44	0.43374
S.D.Q. #20	0.40860
S.D.Q. #4	-0.34425
S.D.Q. #45	0.30425
SAT-M	-0.25786

CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP MEANS (GROUP CENTROIDS)

GROUP	FUNC 1
1	0.92383
2	-0.22685

FIGURE 3

DISTRIBUTION OF CASES FOR
ALL SCHOOLS ANALYSIS



class size in high school (S.D.Q.#1) and high SAT-M scores with non-persistence. This last finding may be possibly explained by the fact that some students leave School A to attend School B, a technically-oriented school. This finding is supported by the fact that the mean for the non-persisters is higher than that for the persisters. Although the centroids are well separated, it must be remembered that the function is nonsignificant. The numerical results are shown in Table VI-5.

3. Classification. Figure 4 shows the centroid for each group in terms of the classification found; 75% of these cases were classified correctly.

F. Stepwise discriminant analysis of persitence--School B only.

1. Selection of variables. Using the 6 variable persistence analysis base and the stepwise procedure with entry significance level = .05, 3 variables were included in the final set for School B. These, in order of entry, were:

Variable	Description
S.D.Q. #23	Number of honors or awards in high school
S.D.Q. #45	Number of extra-curricular activities in high school
SAT-M	SAT Mathematics score

2. Discriminant functions and coefficients. The vectors of correlations of the function with the original variables shows strong positive relationships with the first two selected variables above and smaller positive correlations with S.D.Q.#20 (participation in community or church groups in high school) and S.D.Q.#44 (number of areas outside regular course work in

TABLE VI-5

DIRECT METHOD: UNIVARIATE F TESTS,
DISCRIMINANT FUNCTIONS, SIGNIFICANCES, STRUCTURE
COEFFICIENTS AND CANONCIAL DISCRIMINANT
FUNCTIONS EVALUATED AT GROUP CENTROIDS
FOR SCHOOL A PERSISTENCE ANALYSIS

WILKS' LAMBDA (U-STATISTIC) AND UNIVARIATE F-RATIO
WITH 1 AND 34 DEGREES OF FREEDOM

VARIABLE	WILKS' LAMBDA	F	SIGNIFICANCE
S.D.Q. #4	0.86610	5.257	0.0282
S.D.Q. #20	0.99939	.20830-01	0.8861
S.D.Q. #44	0.95181	1.721	0.1983
S.D.Q. #45	0.99998	.59680-03	0.9806
S.D.Q. #23	0.98869	.3888	0.5371
SAT-M	0.91423	3.190	0.0830

CLASSIFICATION FUNCTION COEFFICIENTS
(FISHER'S LINEAR DISCRIMINANT FUNCTIONS)

IGR =	1	2
S.D.Q. #4	3.023068	3.817354
S.D.Q. #20	1.082290	.8787888
S.D.Q. #44	1.619125	1.461683
S.D.Q. #45	-.2522372	-.55147840-02
S.D.Q. #23	2.427538	2.869120
SAT-M	.6751437	.5918599
(CONSTANT)	-23.65840	-23.09565

CANONICAL DISCRIMINANT FUNCTIONS

FUNCTION	EIGENVALUE	PERCENT OF VARIANCE	CUMULATIVE PERCENT	CANONICAL CORRELATION	AFTER FUNCTION	WILKS' LAMBDA	CHI-SQUARED	D.F.	SIGNIFICANCE
1*	0.29859	100.00	100.00	0.4795134	0	0.7700669	8.0996	6	0.2309

* MARKS THE 1 CANONICAL DISCRIMINANT FUNCTION(S) TO BE USED IN THE REMAINING ANALYSIS.

TABLE VI-5 (CONCLUDED)

DIRECT METHOD: UNIVARIATE F TESTS,
DISCRIMINANT FUNCTIONS, SIGNIFICANCES, STRUCTURE
COEFFICIENTS AND CANONCIAL DISCRIMINANT
FUNCTIONS EVALUATED AT GROUP CENTROIDS
FOR SCHOOL A PERSISTENCE ANALYSIS

STRUCTURE COEFFICIENTS:

POOLED WITHIN-GROUPS CORRELATIONS BETWEEN CANONICAL DISCRIMINANT FUNCTIONS AND DISCRIMINATING VARIABLES
VARIABLES ARE ORDERED BY THE FUNCTION WITH LARGEST CORRELATION AND THE MAGNITUDE OF THAT CORRELATION.

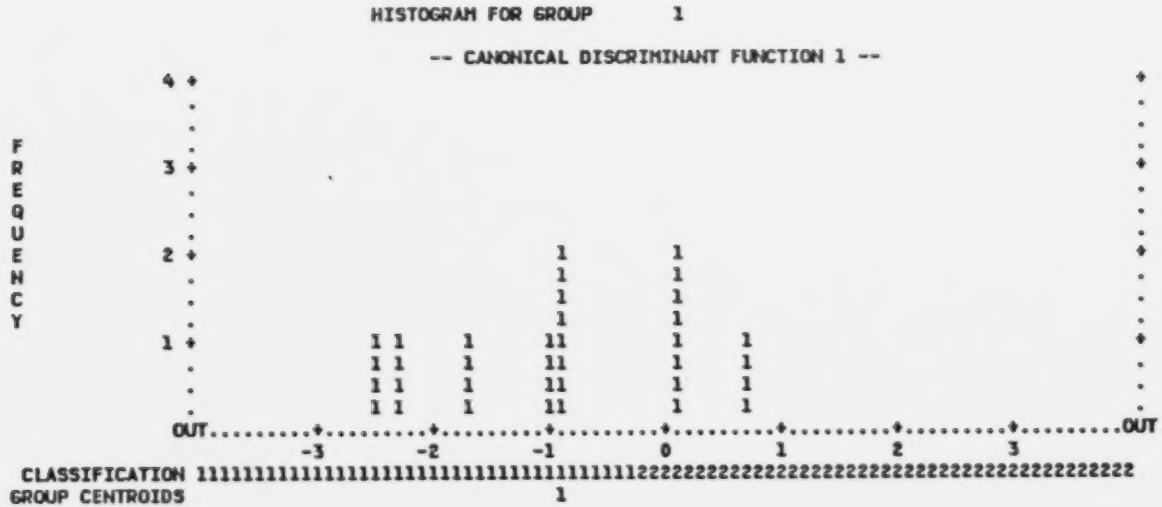
	FUNC 1
S.D.Q. #4	0.71957
SAT-M	-0.56053
S.D.Q. #44	-0.41177
S.D.Q. #23	0.19570
S.D.Q. #20	0.04529
S.D.Q. #45	0.00768

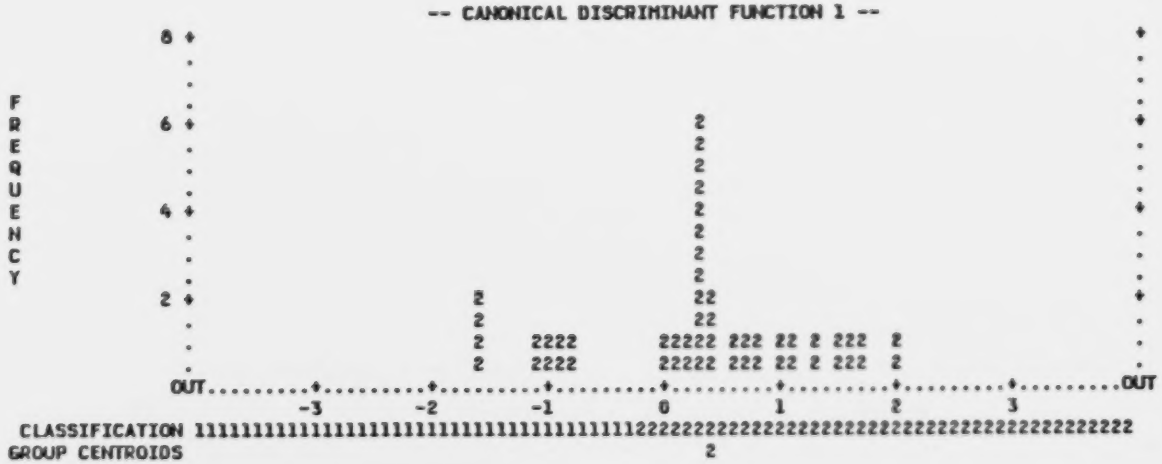
CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP MEANS (GROUP CENTROIDS)

GROUP	FUNC 1
1	-0.91978
2	0.30659

FIGURE 4

DISTRIBUTION OF CASES
SCHOOL A ANALYSIS





which assistance is desired in college). Negative correlations are found with SAT Mathematics score and size of high school class. Since the centroid for the persisters is lower algebraically than that for the nonpersisters the implication is that: (a) non-persistence is associated with self-reported number of extra-curricular activities in high school, participation in community or church groups in high school, self-reported number of areas in which help is desired in college and self-reported number of awards or honors in high school; (b) persistence, on the contrary, is associated with low values of the above variables but high values on the SAT Mathematics score and on self-reported class size in high school. The group centroids are separated by almost 1 standard unit. Table VI-6 shows the numerical results.

3. Classification. Figure 5 shows the distribution of cases for the two groups around the group centroids; 73% were correctly classified by the function.

G. Stepwise discriminant analysis of persistence--for School C only.

1. Selection of variables. Using the same 6 variable base as previously and the same criterion for selection, these significant variables were selected for School C:

Variable	Description
S.D.Q. #23	Number of honors or awards in high school
S.D.Q. #44	Number of areas outside regular course work in which assistance is desired in high school
S.D.Q. #4	Size of high school class
S.D.Q. #20	Participation in community or church groups in high school
SAT-M	SAT Mathematics score

TABLE VI-6

DISCRIMINANT FUNCTIONS, SIGNIFICANCES, STRUCTURE COEFFICIENTS AND CANONCIAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP CENTROIDS FOR SCHOOL B PERSISTENCE ANALYSIS

SUMMARY TABLE

STEP	ACTION ENTERED	ACTION REMOVED	VARS IN	WILKS' LAMBDA	SIG.	LABEL
1	S.D.Q. #23		1	0.943458	0.0008	NUMBER OF HONORS OR AWARDS (PRIMARILY ACADEMIC) RECEIVED IN HIGH SCHOOL
2	S.D.Q. #45		2	0.912506	0.0001	NUMBER OF EXTRA-CURRICULAR ACTIVITIES IN HIGH SCHOOL
3	SAT-M		3	0.887235	0.0000	SAT MATHEMATICS SCORE

CLASSIFICATION FUNCTION COEFFICIENTS
(FISHER'S LINEAR DISCRIMINANT FUNCTIONS)

IGR =	1	2
S.D.Q. #45	1.356100	.9402740
S.D.Q. #23	1.982149	1.190935
SAT-M	.3193877	.3676465
(CONSTANT)	-10.20999	-9.609774

CANONICAL DISCRIMINANT FUNCTIONS

FUNCTION	EIGENVALUE	PERCENT OF VARIANCE	CUMULATIVE PERCENT	CANONICAL CORRELATION	AFTER FUNCTION	WILKS' LAMBDA	CHI-SQUARED	D.F.	SIGNIFICANCE
					0	0.8872354	23.151	3	0.0000
1*	0.12710	100.00	100.00	0.3358043					

* MARKS THE 1 CANONICAL DISCRIMINANT FUNCTION(S) TO BE USED IN THE REMAINING ANALYSIS.

TABLE VI-6 (CONCLUDED)

DISCRIMINANT FUNCTIONS, SIGNIFICANCES, STRUCTURE
COEFFICIENTS AND CANONCIAL DISCRIMINANT
FUNCTIONS EVALUATED AT GROUP CENTROIDS
FOR SCHOOL B PERSISTENCE ANALYSIS

STRUCTURE COEFFICIENTS:

POOLED WITHIN-GROUPS CORRELATIONS BETWEEN CANONICAL DISCRIMINANT FUNCTIONS AND DISCRIMINATING VARIABLES
VARIABLES ARE ORDERED BY THE FUNCTION WITH LARGEST CORRELATION AND THE MAGNITUDE OF THAT CORRELATION.

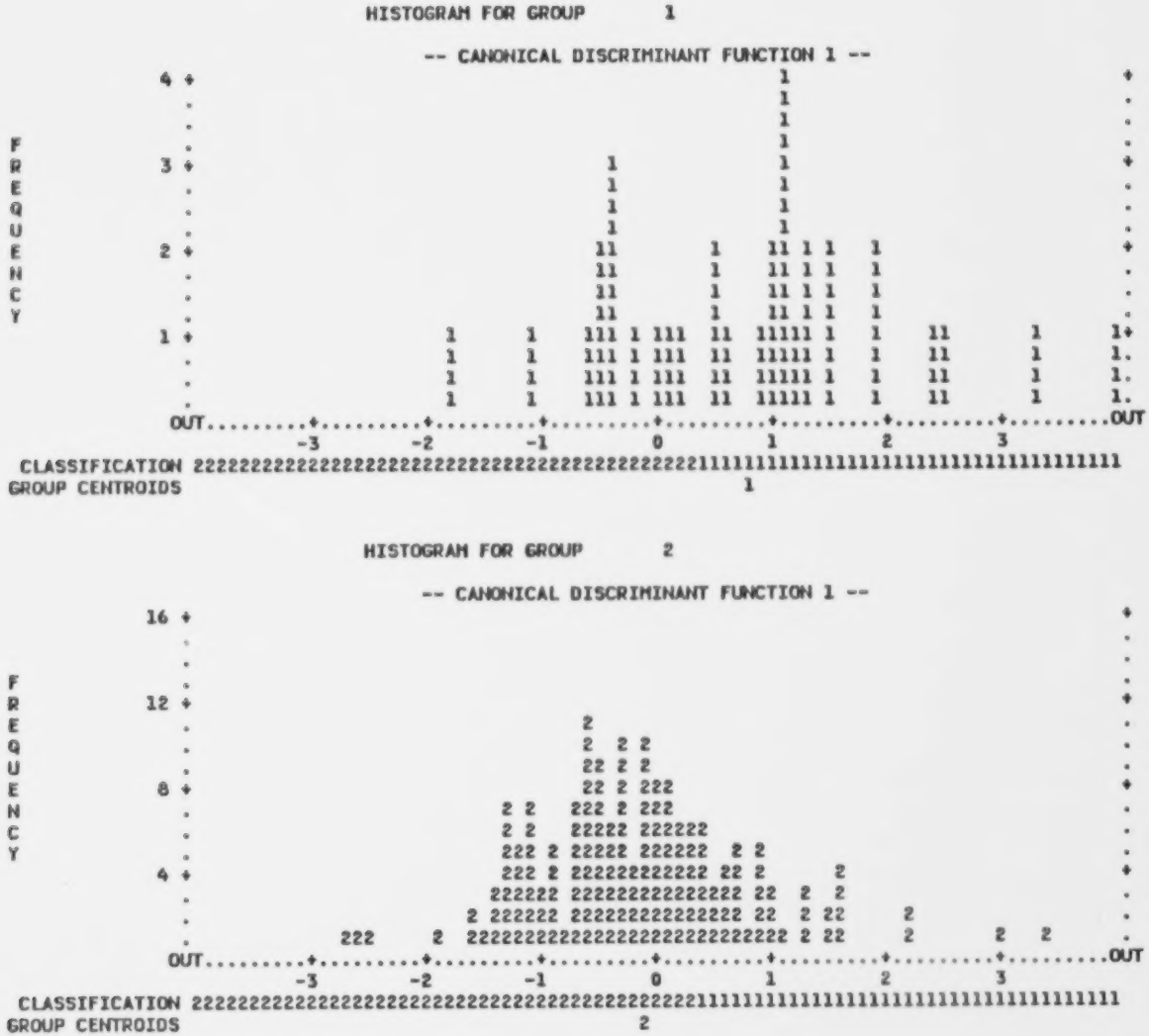
	FUNC 1
S.D.Q. #23	0.68668
S.D.Q. #45	0.59579
SAT-M	-0.34757
S.D.Q. #20	0.18571
S.D.Q. #44	0.16012
S.D.Q. #4	-0.15017

CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP MEANS (GROUP CENTROIDS)

GROUP	FUNC 1
1	0.79071
2	-0.15911

FIGURE 5

DISTRIBUTION OF CASES FOR
SCHOOL B ANALYSIS



2. Discriminant functions and coefficients. The structure coefficients show postivie relationships with number of honors/awards in high school, participation in church or community groups in high school, number of areas outside regular course work in which help is desired in college and with number of extra-curricular activities in high school. The negative correlations are with SAT Mathematics score and with high school class size. As in the case of School B the nonpersisters have an algebraically higher group centroid than the persisters. Consequently, persistence is found here to go with large class size in high school and high SAT mathematics scores. Non-persistence goes with a large number of extra-curricular activities in high school, participation in community or church groups in high school, number of areas in which help is desired in college and with a large number of honors/awards in high school, all of these being self-reported in both groups. The centroids of the discriminant function arried at here show better separation than in any of the other schools, almost 2 standard units. The numerical results described above are found in Table VI-7.

3. Classification. Figure 6 shows the distribution of cases for the two groups around the group centroids; 91% were correctly classified by the function.

H. Summary of results. Results from this chapter that help answer the questions posed at the beginning are given here.

1. Predictors of persistence common to all three colleges. In answer to the question "What are the predictors of persistence

TABLE VI-7

DISCRIMINANT FUNCTIONS, SIGNIFICANCES, STRUCTURE
COEFFICIENTS AND CANONCIAL DISCRIMINANT
FUNCTIONS EVALUATED AT GROUP CENTROIDS
FOR SCHOOL C PERSISTENCE ANALYSIS

SUMMARY TABLE

STEP	ACTION ENTERED	ACTION REMOVED	VARS IN	WILKS' LAMBDA	SIG.	LABEL
1	S.D.Q. #23		1	0.697600	0.0000	NUMBER OF HONORS OR AWARDS (PRIMARILY ACADEMIC) RECEIVED IN COLLEGE
2	S.D.Q. #44		2	0.645318	0.0000	NUMBER OF AREAS OUTSIDE REGULAR COURSE WORK IN WHICH ASSISTANCE IS DESIRED IN COLLEGE
3	S.D.Q. #4		3	0.617402	0.0000	SIZE OF HIGH SCHOOL CLASS
4	S.D.Q. #20		4	0.595719	0.0000	PARTICIPATION IN COMMUNITY OR CHURCH GROUPS IN HIGH SCHOOL
5	SAT-M		5	0.564496	0.0000	SAT MATHEMATICS SCORE

CLASSIFICATION FUNCTION COEFFICIENTS
(FISHER'S LINEAR DISCRIMINANT FUNCTIONS)

IGR =	1	2
S.D.Q. #4	3.756208	4.499919
S.D.Q. #20	2.151205	1.259260
S.D.Q. #44	2.593773	2.070488
S.D.Q. #23	5.087752	2.928667
SAT-M	.2956435	.3688115
(CONSTANT)	-26.18080	-22.49732

CANONICAL DISCRIMINANT FUNCTIONS

FUNCTION	EIGENVALUE	PERCENT OF VARIANCE	CUMULATIVE PERCENT	CANONICAL CORRELATION	AFTER FUNCTION	WILKS' LAMBDA	CHI-SQUARED	D.F.	SIGNIFICANCE
					0	0.5644959	64.330	5	0.0000
1*	0.77149	100.00	100.00	0.6599274					

* MARKS THE 1 CANONICAL DISCRIMINANT FUNCTION(S) TO BE USED IN THE REMAINING ANALYSIS.

TABLE VI-7 (CONCLUDED)

DISCRIMINANT FUNCTIONS, SIGNIFICANCES, STRUCTURE
COEFFICIENTS AND CANONCIAL DISCRIMINANT
FUNCTIONS EVALUATED AT GROUP CENTROIDS
FOR SCHOOL C PERSISTENCE ANALYSIS

STRUCTURE COEFFICIENTS:

POOLED WITHIN-GROUPS CORRELATIONS BETWEEN CANONICAL DISCRIMINANT FUNCTIONS AND DISCRIMINATING VARIABLES
VARIABLES ARE ORDERED BY THE FUNCTION WITH LARGEST CORRELATION AND THE MAGNITUDE OF THAT CORRELATION.

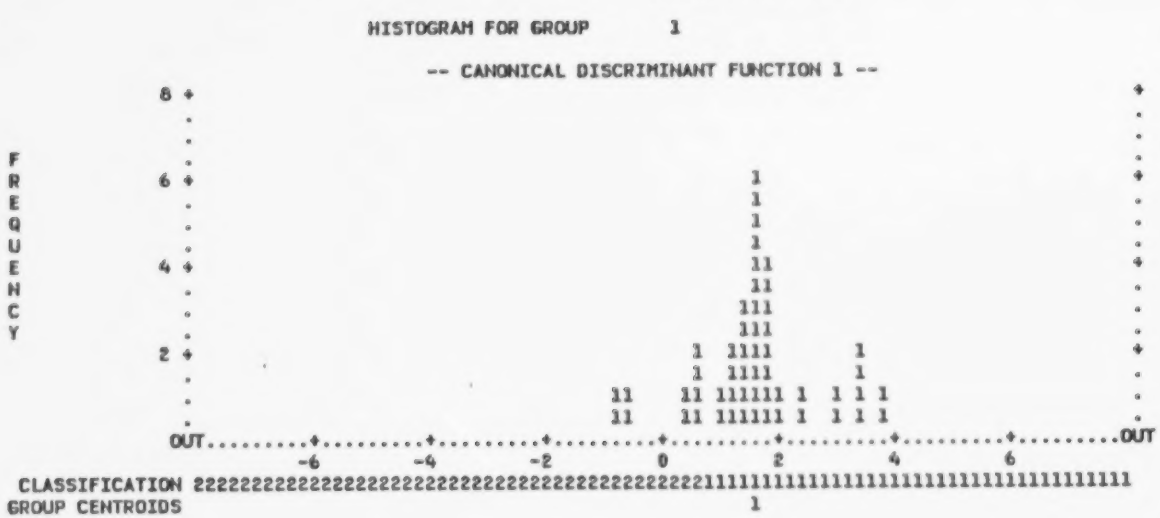
	FUNC 1
S.D.Q. #23	0.74959
S.D.Q. #20	0.40204
S.D.Q. #44	0.38264
S.D.Q. #45	0.29194
SAT-M	-0.28991
S.D.Q. #4	-0.28766

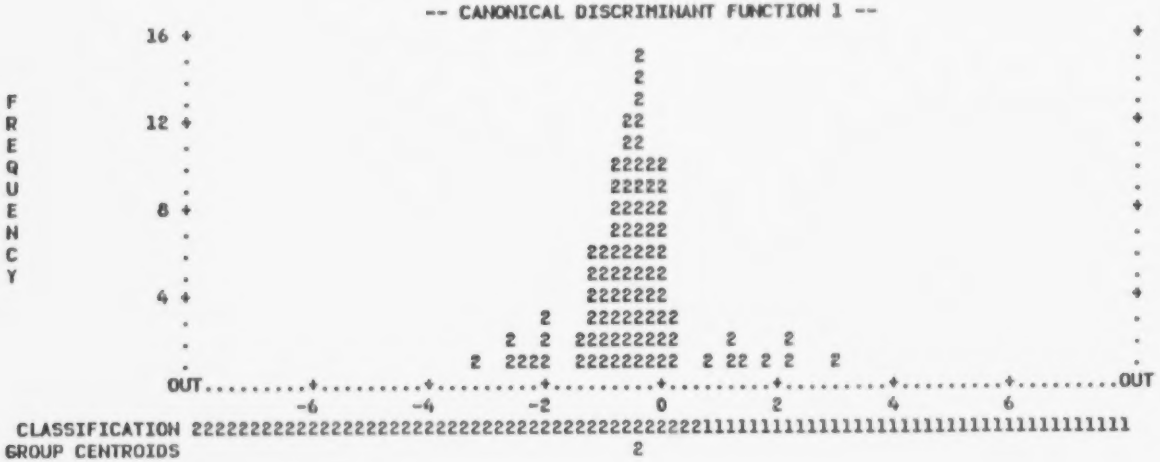
CANONICAL DISCRIMINANT FUNCTIONS EVALUATED AT GROUP MEANS (GROUP CENTROIDS)

GROUP	FUNC 1
1	1.58987
2	-0.47696

FIGURE 6

DISTRIBUTION OF CASES
SCHOOL C ANALYSIS





through the first two years of college?" we have found the following pattern common to all five analyses just described: (a) among the 19 variables that were selected (or 6 for the later analyses) as the initial sets for discriminant analyses, only SDQ variables were selected in the final stepwise procedure, except for SAT mathematics score (b) size of high school class was selected in 3 of 5 analyses (in all the analyses the larger the size the greater the persistence), (c) SAT-M was selected in all of the within-school analyses and in the across-school analysis (in all cases except for School A, high scores were associated with persistence), (d) number of areas in which help is desired in college and number of extra-curricular activities were associated with non-persistence in all 5 anlayses (the centroids for School A in the schools x persistence analysis seem to show a reversal but this may be due to a school effect). Finally, the schools x persistence analysis seems to show a clear academic factor for function 2 and a participatory factor for function 1, consonant with the other results.

2. Predictors of persistence peculiar to individual schools. The pattern of selection for the within-school analysis is similar in Schools B and C and in the all-schools analysis. Neither class size nor areas in which help would be desired was initially selected in the School B analysis. Number of extra-curricular activities in high school was not selected by School C but participation in community or church groups in

high school. In School A the discriminant function was non-significant. In summary, all 3 schools were in general agreement both as to the selection and orientation of variables predicting persistence.

Chapter VII

Summary and Conclusions

In this chapter a summary of findings from previous chapters is given. Specifically, the following findings are discussed: (1) results from correlations and regressions of variables within school (Chapter IV) are summarized, (2) findings on comparisons of the handicapped with the hearing at Institutions C, A and B (Chapter V) are discussed and (3) a summary from the persistence analyses (Chapter VI) is given. In the last section of the chapter suggestions are given, including those for needed further research.

A. Summary of results from previous chapters.

1. Principal discoveries from the within-school validity analyses.

a. Institution A, which has only deaf studetns, and no integration of the handicapped, has a higher mean score on the SAT Verbal test, namely, 330, than Institution B and an almost equivalent SAT Quantitative score, 380. The average high school grade, on a 0 to 4 scale, namely 3.05, is about the same as that for Institution C but the college grade point average, 2.63, is more similar to that for Institution B and higher than that for Institution C. The hearing group at Institution C has a definitely higher high school grade average, 3.15, than any of the handicapped groups.

College A seems to be academically oriented. The significant validities for college grades are for the most part for variables with academic orientation, such as

number of A grades in high school, number of advanced placement courses and the Test of Standard Written English. In fact, 12 out of 16 validities are academically oriented. Validities of .50 or greater occur only for SAT-V, SAT-M, TSWE and number of A grades. The most significant regression combinations were the SAT scores and the SAT scores plus high school grade point average. However, the entire set of 26 SDQ questions was almost significant at .0506 and had the highest multiple R of any of the 4 groups of variables: (1) SAT scores, (2) SAT plus H.S.GPA, (3) demographics, (4) deafness factors. When the SDQ set was reanalyzed in more detail it was found that high school rank and self-rated ability in creative writing accounted by themselves for a more realistic multiple R of .6281, still very high.

College B is more oriented towards the quantitative side. The SAT verbal score is lowest for this college and does not predict well. On the other hand, the SAT-M mean is almost tied with the mean on this variable for School C and has a higher value than that for School A. The average high school grade, as measured by the SDQ (and so on the same scale as that for Institutions A and C), is the lowest of the three. The college grade point average is higher than that in the other two schools, but it must be remembered this is a cumulative grade point average, the freshman GPA being unavailable. Again, the significant validities for college grades for School B are, on the whole, academic;

this includes the Stanford and California reading tests, as well as the SAT-M. The highest validity of all is that of class rank in high school, followed by high school grade point average and number of A grades. It would seem that high school grades predict better than tests, relative to the other two schools. In the regressions all sets of variables are significant except demographics. The highest multiple R is for the SDQ set. This was still true for the more detailed analysis subsequently given.

College C, fully mainstreamed, has the highest SAT means both verbal and quantitative, 330 and 414, respectively. The college GPA is the lowest, 2.43, and the high school GPA practically tied for highest, 3.04. The high school GPA value may indicate the selection of better deaf students for School C and the college GPA may be because of competition with hearing students. The validities for School C show mainly academic predictors but such nonacademic variables as size of high school class (the larger the higher the college grade in general), sales ability, acting ability and mechanical ability are also prominent. In the regressions only the academic sets are significant, if SDQ is included. The SDQ consistently shows the highest multiple R.

2. Comparison of handicapped with nonhandicapped.

   a. Model testing for those reporting scores. The Gulliksen-Wilks method shows that there are no significant differences

between the prediction system for the hearing students at Institution C and that for the hearing-impaired. Thus the regression equations for the normal group could be used without bias to predict the college grade point average of the handicapped whether the equation is based on SAT scores alone or on the combination of high school grade point average and the scores.

A similar result comes from the application of the Belson method; the residuals are very small and are more or less the same for all score levels. By correlating the residuals with predictors not in the model, slight underprediction is found for self-rated athletic ability (students do better than expected in first year grades using athletic ability as a predictor) and in organizing work. Slight overprediction (students get poorer college grades than expected) occur in the variables connected with understanding written English, namely, the Test of Standard Written English, self-rating on written expression and self-rating on creative writing.

When the hearing students at Institution C are compared with deaf students at Institution A the results are somewhat similar. The Gulliksen-Wilks method shows comparable prediction systems, that is, the regression lines are parallel. However, here the intercepts are different, which means that there is a significant underprediction for the deaf based on the School C regression equation. Part

of this may be due to a difference in school grading systems rather than any bias against the handicapped. The residuals too are larger here. They show underprediction for high school rank, school-supplied high school grade point average and 3 writing variables and overprediction for age. The underpredictions for writing skills are somewhat puzzling.

For Institution B the picture is quite different since there seems to be almost no comparability of prediction systems. The Gulliksen-Wilks method shows nonparallel slopes so that the intercepts cannot be properly compared; for different SAT scores and/or high school GPA the deaf are either over or underpredicted. The residuals are still larger than those for School A and their mean for both Models A and B are positive; this means underprediction on the whole. Correlations with residuals are less interpretable here both because of a school effect and uncertainty about over or underprediction.

b. Model testing for the entire group including nonscore-reporters at Institution C. In the previous comparisons only score-reporters, both nonhandicapped and handicapped, were included in the analysis, except at Institution B, where 110 students or half the sample were found on the score-report files, although of the other 96 at least 50 had shown enough interest to respond to some of the SDQ questions. In Institution C 68 were found who had reported

scores; 82 may have been nonreporters but probably most of these were not found on the report files simply because score-report files were kept only since 1977. Since there is interest in finding out contrasts between prediction systems for the SAT even for those not using the SAT as part of their effort in gaining admission, these nonreporters were included in a further test against a "nonhandicapped" file which now included the 4060 score reporters plus 110 nonreporters. Since the proportion of nonreporters among the handicapped from the table at the end of Chapter III is at least 15% (and may be about 50%, since some of the nonreporters may have been on files no longer existing) and since the proportion among the controls is about 2%, the comparison is unequal. The Gulliksen-Wilks method did show significant differences here in intercept but not in slope. The residual analysis shows the underprediction for the handicapped was not large. These differences reported in Chapter V may reflect score report vs. not, among other things. In any case the deaf who do not use the SAT for college admission are being compared with a hearing group who do, almost entirely, use the SAT in attempting to enter college.

3. Persistence analyses. Except for age of onset of deafness, all variables selected stepwise from the original 19-variable base, in the persistence/nonpersistence by school 6-group analyses were taken from the Student Descriptive Questionnaire. Five

were academic in nature, five were not. An examination of the plot of the 6 centroids seems to show that the second discriminant function is academic. School C most clearly distinguishes persisters from nonpersisters, perhaps partly because of clearer demarcation as to when the student actually is enrolled with a regular status (in Schools A and B there is a somewhat indefinite preparatory time for deaf students before they achieve full status).

The one-way persister/non-persister analysis over the total group from all schools shows some of the same discriminating variables as in the two-way analysis: size of high school class, number of areas in which outside help is desired, number of extra-curricular activities in high school and participation in community or church groups in high school. For the School A sample by itself large high school classes were associated with greater persistence and high SAT-M scores with non-persistence. For Schools B and C large class size and high SAT Mathematics scores were associated with persistence, while number of areas in which help is desired in college, number of extra-curricular activities in high school, participation in community or church groups in high school and number of honors/awards in high school were associated with non-persistence.

B. Concluding observations and suggestions. In what follows, findings are listed which hopefully will be of value to high school counselors of the deaf; other findings are cited which it is hoped will be of

interest to college admissions officers; finally, a few suggestions are given for further research. It should be stressed that the findings in this study are somewhat limited in scope since they take into account only three, albeit major, institutions where the deaf attend college. The overall finding of no over or under-prediction for deaf students who report scores may not apply to some other groups.

1. Findings related to counseling the deaf in high school.

(1) A biographical questionnaire such as the Student Descriptive Questionnaire can elicit many responses useful in predicting academic success and persistence in college. However, although purely academic questions tend to be oriented towards persistence, other questions, such as those asking about participation in extra-curricular activities, number of areas in which help is desired in college, and number of self-reported awards/honors in high school, tend to be associated with non-persistence.

(2) If possible, more remedial work in writing skills should be performed in high school since these predictors tend to over-predict college grades

(3) Profound deafness does not handicap one more than very moderate deafness as far as college grades and persistence are concerned

(4) Level of education planned, awards in high school, high self-ratings in academic skills such as mathematics and

science, and high school grade point average, as well as test scores, are predictors of college academic success

2. Findings useful for college admissions officers in considering admission of deaf students to college.

(1) Certain academically-oriented items from a biographical questionnaire such as the Student Descriptive Questionnaire can be scored so as to predict college academic success. Students' self-ratings tend to agree with objective measures.

(2) The SAT verbal and mathematics tests may be good predictors of deaf students' academic success in college but not necessarily of persistence.

(3) The high school grade point average adds to the predictive power of the SAT whether the former is based on the SDQ self-reported responses or accurately-measured grades from the high school itself.

(4) Since the Student Descriptive Questionnaire and high school grades have good predictive power as well as the SAT, the SAT should never be used exclusively as a standard for college entrance; in some instances, as for School B, largely technical, the predictive power of the verbal section of the SAT may be so low as to warrant replacement by some other test such as the Stanford Achievement Test battery.

(5) Hearing characteristics, including understanding of spoken English, should never be a basis for college admission or rejection. If anything, the evidence shows that the most profoundly deaf do better than those who are only slightly

deaf, given that the individual is hearing-impaired in the first place.

(6) Race, sex and age should not be a basis for acceptance/rejection. None of these variables, alone or in combination, has much predictive power (a slight correlation was found in favor of younger students at one school in one analysis but this is an exception to the general pattern).

3. Suggestions for future research.

(1) The progress of the deaf at schools represented in this study should be compared with their progress in other colleges where often they are an extremely small minority.

(2) The effect of mainstreaming deaf students should be more adequately studied, if possible filtering out the factor of self-selection in those who are mainstreamed. This should be done both at the secondary school and college levels.

(3) Other samples, perhaps especially of those not reporting scores, both of the deaf and hearing, should be gathered and compared to test further the possibility of bias on the SAT.

(4) More research needs to be done on finding common predictors of persistence of deaf students in college, both within and especially across, various types of postsecondary institutions.

(5) More research is needed on practical, improved techniques for dealing with missing data.

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Appendix A

The Student Descriptive Questionnaire

STUDENT DESCRIPTIVE QUESTIONNAIRE (SDQ)

Completing the SDQ gives you a chance to send colleges information about your interests, experiences, activities, and plans, along with your test scores. Your responses may help counselors and admissions officers in advising you about your college plans. Your answers to most of the questions will appear on the score report that will be sent to you, your school, and the colleges and scholarship programs you name to receive reports. Your answers to other questions (the questionnaire identifies which ones) will *not* appear on your score reports but will be used for research and planning by educational institutions.

Mark your answers to the SDQ in item 16 of the Registration Form. You are encouraged to answer all questions, although you may omit the answer to a specific question, if you wish. Most of the questions have been written for students still in high school. If you are no longer in school, answer them as well as you can.

You can delete or change your answers at any time by using an Additional Report Request Form (see pages 12 and 13) or when you register for another test.

Note: If you have previously filled out a Student Descriptive Questionnaire and want to update your answers, record one of the following options at the beginning of the SDQ response area:

(A) Substitute my answers here for my previous answers to the same questions. Keep the other information I gave earlier.
(B) Include only my current answers. Delete all answers I gave earlier.
(C) Delete all my previous answers. I do not wish to have SDQ information in my records.

For further information on changing descriptive information, see page 14.

1. The College Board's Student Search Service is an information service for students, colleges, and governmental scholarship programs. It is free to all students who participate in the ATP and works this way:

If you ask to participate, colleges and scholarship programs interested in students with your characteristics can ask for and receive your name, address, sex, date of birth, high school, and intended major. The answers you give to the questions below may be used to determine if you fit the characteristics colleges have requested in the Student Search Service. Different colleges and scholarship programs will be interested in students with specific characteristics, such as place of residence, range of test scores, intended college majors, ethnic background, and income. For example, a state scholarship program may want to identify all students within that state who are eligible for the Pell (Basic) Grant program in order to notify them of when and how to apply.

By participating, you may receive information from a variety of colleges and scholarship programs about their programs, admissions procedures, and financial aid opportunities. The mail you receive may include information from a college well known to you or come from one unfamiliar to you but with the academic program and other features you find important. In either case the Student Search Service can

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provide you with information you might not otherwise discover.

Your name will be made available to the Student Search Service only if you answer "Yes" to this item.

(Y) Yes, I want to be included in the Student Search Service.
(N) No, I do not want to be included in the Student Search Service.

2. What kind of high school are you attending?

(A) Public (B) Other than public

3. Which of the following best describes your present high school program?

(A) Academic or college preparatory
(B) General
(C) Career-oriented (business, vocational, industrial arts)
(D) Other

4. About how many students are there in your high school class?

(A) Fewer than 100 (B) 100-249 (C) 250-499
(D) 500-749 (E) 750 or more

5. What is your most recent high school class rank? (For example, if you are 15th in a class of 100, you are in the second tenth.) If you do not know your rank or rank is not used in your school, give your best estimate.

(A) Highest tenth } top fifth
(B) Second tenth }
(C) Second fifth
(D) Middle fifth
(E) Fourth fifth
(F) Lowest fifth

Questions 6 through 11 ask you to blacken the letter corresponding to the total years of study you expect to complete in certain subject areas. Include in the total only courses you have taken since beginning the ninth grade and those you expect to complete before graduation from high school. Count less than a full year in a subject as a full year. Do not count a repeated year of the same course as an additional year of study.

(A) One year or the equivalent
(B) Two years or the equivalent
(C) Three years or the equivalent
(D) Four years or the equivalent
(E) More than four years or the equivalent
(F) I will not take any courses in the subject area.

6. English

7. Mathematics

8. Foreign Languages

9. Biological Sciences (for example, biology, botany, or zoology)

10. Physical Sciences (for example, chemistry, physics, or earth science)

11. Social Studies (for example, history, government, or geography)

For each of the subject areas in questions 12 through 17, blacken the *latest* year-end or midyear grade you received since beginning the ninth grade. For example, if you are a senior and have not taken biology or any other biological science since your sophomore year, indicate that year-end grade. If you are a junior and have completed the first half of the year in an English course, indicate that midyear grade.

If you received the grade in an advanced, accelerated, or honors course, also blacken the letter H.

(A) Excellent (usually 90-100 or A)
(B) Good (usually 80-89 or B)
(C) Fair (usually 70-79 or C)
(D) Passing (usually 60-69 or D)
(F) Failing (usually 59 or below or F)
(G) Only "pass-fail" grades were assigned and I received a pass.
(H) The grade reported was in an advanced, accelerated, or honors course.

12. English

13. Mathematics

14. Foreign Languages

15. Biological Sciences

16. Physical Sciences

17. Social Studies

18. Will you have completed advanced high school or college-level work before entering college? If so, mark the letter for each field in which you plan to apply for advanced placement, credit-by-examination, or exemption from required courses.

(A) English
(B) Mathematics
(C) Foreign Languages
(D) Biological Sciences
(E) Physical Sciences
(F) Social Studies
(G) Art/Music

19. On the average, how many hours per week do you work in a part-time job? (Exclude vacations.)

(A) None
(B) Less than 6 hours
(C) 6 to 10 hours
(D) 11 to 15 hours
(E) 16 to 20 hours
(F) 21 to 25 hours
(G) 26 to 30 hours
(H) More than 30 hours

20. How much have you participated in community or church groups while in high school?

(A) I have not been a member of any community or church group.
(B) I have belonged to one or two groups but have not participated actively.
(C) I have participated actively in one or two groups but have not held any major offices (for example, president, chairman, or treasurer).
(D) I have participated actively in more than two groups but have not held any major offices.
(E) I have participated actively and have held a major office in at least one community or church group.

21. How much have you participated in athletics in or out of high school?

(A) I have not participated in athletics.
(B) I have participated in individual or intramural athletics.
(C) I have been on one or more varsity teams but have not earned a varsity letter.
(D) I have earned one or more varsity letters in a single sport.
(E) I have earned varsity letters in more than one sport.

22. How much have you participated in clubs and organizations in high school?

(A) I have not been a member of any club or organization.
(B) I have belonged to some organizations but have not held any major offices (for example, president, editor, or class or school representative).
(C) I have held one or two major offices.
(D) I have held three or four major offices.
(E) I have held five or more major offices.

23. During your high school years how many honors or awards (for example, essay contest, debating tournament, science fair, music, art or theater competition, or membership in a scholastic honors group) have you received?

(A) None (B) One or two (C) Three or four
(D) Five or six (E) Seven or more

24. What is the highest level of education you plan to complete beyond high school?

(A) A two-year specialized training program (for example, electronics or laboratory technician)
(B) A two-year Associate of Arts degree (A.A.)
(C) Bachelor's degree (B.A. or B.S.)
(D) Master's degree (M.A. or M.S.)
(E) Doctor's or other professional degree (such as M.D. or Ph.D.)
(F) Other or undecided

25. What is the date of your high school graduation? Blacken month and last two digits of year.

26. When do you expect to enter college? Blacken month and last two digits of year.

Your response to question 27 will not be included in the reports that are sent to you, your school, and the colleges you designate.

27. Do you plan to apply for financial aid at any college?

(Y) Yes (N) No

28. When you enroll, do you expect to attend college

(A) full-time (B) part-time

29. When you enroll, do you expect to attend college during the

(A) day (B) evening

30. Where do you prefer to live during your first two years in college?

(A) At home
(B) Single-sex dorm
(C) Coed dorm
(D) Fraternity or sorority house
(E) On-campus apartment
(F) Off-campus apartment

31. Are you a United States citizen?

(Y) Yes (N) No

32. Are you a veteran of the United States Armed Forces?

(Y) Yes (N) No

Questions 33 through 36 are for students who have finished high school and have already attended college. If you have not, go on to the paragraph preceding question 37.

33. Please put the code number of the college you are attending or most recently attended in the spaces provided and blacken the corresponding ovals. See the gray-bordered pages for college code numbers.

34. Are you enrolled in that college now?

(Y) Yes (N) No

35. Approximately what was your grade point average at that college on a scale of 0 (F) to 4 (A)?

(A) 3.5 or above
(B) 3.0–3.4
(C) 2.5–2.9
(D) 2.0–2.4
(E) 1.5–1.9
(F) Below 1.5
(G) Not applicable

36. If you expect to transfer credits, at what level do you expect to enter the new college?

(A) First semester freshman
(B) Second semester freshman
(C) First semester sophomore
(D) Second semester sophomore
(E) Junior
(F) Senior

The College Board wants its tests and services to be fair and useful to all candidates. Research based on responses to questions 37 and 38 will help the College Board evaluate and improve its tests and services. Your responses will also be reported to your school and to those colleges that accept such information in order to make sure their programs are fair and useful to students of all racial and ethnic backgrounds.

37. How do you describe yourself?

(A) American Indian or Alaskan native
(B) Black or Afro-American or Negro
(C) Mexican-American or Chicano
(D) Oriental or Asian-American or Pacific Islander
(E) Puerto Rican
(F) White or Caucasian
(G) Other

38. Is English your best language?

(Y) Yes (N) No

Your responses to questions 39 and 40 will be used only for research. They will not be included in the score reports that are sent to you, your school, and the colleges you designate.

39. Indicate the highest level of education completed by your father or male guardian.

(A) Grade school
(B) Some high school
(C) High school diploma
(D) Business or trade school
(E) Some college
(F) Bachelor's degree
(G) Some graduate or professional school
(H) Graduate or professional degree

40. Using the list in question 39, indicate the highest level of education completed by your mother or female guardian.

Questions 41 through 43 ask about your parents' financial situation and should be answered in consultation with them. Your individual responses will not be reported to anyone. Only summary responses for groups of students will be reported to colleges and high schools.

41. How many persons are dependent on your parent(s) or legal guardian for financial support? Be sure to include your parent(s) and yourself.

(A) Two (B) Three (C) Four (D) Five
(E) Six (F) Seven (G) Eight (H) Nine or more

42. During your first year in college, how many persons dependent on your parent(s) or legal guardian will be in college? Include yourself.

(A) One (B) Two (C) Three
(D) Four (E) Five or more

43. What was the approximate income of your parents before taxes last year? Include taxable and nontaxable income from all sources.

(A) Less than $3,000 a year (about $57 a week or less)
(B) Between $3,000 and $5,999 a year (from $58 to $114 a week)
(C) Between $6,000 and $8,999 a year (from $115 to $173 a week)
(D) Between $9,000 and $11,999 a year (from $174 to $230 a week)
(E) Between $12,000 and $14,999 a year (from $231 to $288 a week)
(F) Between $15,000 and $17,999 a year (from $289 to $346 a week)
(G) Between $18,000 and $20,999 a year (from $347 to $403 a week)
(H) Between $21,000 and $23,999 a year
(I) Between $24,000 and $26,999 a year
(J) Between $27,000 and $29,999 a year
(K) Between $30,000 and $34,999 a year
(L) Between $35,000 and $39,999 a year
(M) Between $40,000 and $44,999 a year
(N) Between $45,000 and $49,999 a year
(O) $50,000 a year or more

44. You may want to receive help outside regular course work from the college you plan to attend. If so, blacken the letter for each area in which you may want help.

(A) Counseling about educational plans and opportunities
(B) Counseling about vocational/career plans and opportunities
(C) Improving mathematical ability
(D) Finding part-time work
(E) Counseling about personal problems
(F) Increasing reading ability
(G) Developing good study habits
(H) Improving writing ability

Questions 45 and 46 concern your interests in extracurricular activities in high school and your plans to participate in college.

45. Blacken the letter for each activity in which you participated while in high school.

(A) Athletics—interscholastic, intramural, or community
(B) Ethnic or racial activities or organizations
(C) Journalism, debating, or dramatic activities
(D) Art, music, or dance
(E) Preprofessional or departmental clubs—for example, Future Teachers of America, American Society of Civil Engineers
(F) Religious activities or organizations
(G) Social clubs or community organizations
(H) Student government

46. Using the list in question 45, blacken the letter for each activity in which you plan to participate in college.

Questions 47 through 60 concern how you feel you compare with other people your own age in certain areas of ability. For each field, blacken the letter

(A) if you feel you are in the highest 1 percent in that area of ability
(B) if you feel you are in the highest 10 percent in that area of ability
(C) if you feel you are above average in that area of ability
(D) if you feel you are average in that area of ability
(E) if you feel you are below average in that area of ability

47. Acting ability
48. Artistic ability
49. Athletic ability
50. Creative writing
51. Getting along with others
52. Leadership ability
53. Mathematical ability
54. Mechanical ability
55. Musical ability
56. Organizing work
57. Sales ability
58. Scientific ability
59. Spoken expression
60. Written expression

(SDQ continues on page 10.)

61. From the list below, choose the field that would be your first choice for your college curriculum. Write the number of that field and blacken the corresponding ovals.

62. From the same list, choose the field that would be your second choice. Write the number of that field and blacken the corresponding ovals.

63. From the same list, choose the career field that you think you will pursue after college. Write the number of that field and blacken the corresponding ovals. If your exact choice does not appear, select the one most closely related.

Fields of Study in Two- and Four-Year Colleges and Career Choices

100 AGRICULTURE
101 agriculture economics
102 agronomy, field crops
103 animal science
104 dairy science
105 farming, ranching
106 fish and game, wildlife management
107 food science
108 horticulture
109 landscaping
110 soil sciences

125 ARCHITECTURE AND ENVIRONMENTAL DESIGN
126 architecture
127 city planning
128 urban development

150 ART
151 art history
152 commercial
153 design
154 fashion design
155 graphic arts
156 interior decorating
157 museum work
158 photography
159 printing
160 studio art

175 BIOLOGICAL SCIENCES
176 bacteriology
177 biochemistry
178 biology
179 biophysics
180 botany
181 ecology
182 marine biology
183 physiology
184 zoology

200 BUSINESS AND COMMERCE
201 accounting
202 advertising
203 business management and administration
204 court reporting
205 finance and banking
206 hotel and restaurant administration
207 industrial management
208 marketing
209 personnel work
210 real estate
211 sales and retailing
212 secretarial studies
213 transportation and commerce

225 COMMUNICATIONS
226 film
227 journalism
228 radio and television

250 COMPUTER SCIENCE AND SYSTEMS ANALYSIS
251 computer science
252 data processing
253 systems analysis

275 EDUCATION
276 agricultural education
277 art education
278 business education
279 child development ar. education
280 college teaching
281 educational administration
282 education of exceptional children
283 education of the deaf
284 education of the mentally retarded
285 elementary education
286 general education
287 guidance counseling
288 health education
289 home economics education
290 industrial arts education
291 music education
292 physical education
293 recreation
294 secondary education
295 speech therapy
296 vocational trade and industrial education

325 ENGINEERING
326 aerospace and aeronautical engineering
327 agricultural engineering
328 air-conditioning engineering
329 architectural engineering
330 ceramic engineering
331 chemical engineering
332 civil engineering
333 construction and transportation
334 drafting
335 electrical engineering
336 engineering aide
337 engineering design
338 engineering sciences
339 industrial and management engineering
340 industrial laboratory technology
341 instrumentation technology
342 materials science
343 mechanical engineering
344 metallurgical engineering
345 mining and mineral engineering
346 naval architecture and marine engineering
347 nuclear technology
348 petroleum engineering
349 plastics technology
350 quality control technology
351 surveying
352 textile engineering

375 ENGLISH AND LITERATURE
376 creative writing
377 English
378 literature
379 speech

400 ETHNIC STUDIES
401 American Indian studies
402 Black studies
403 Mexican-American studies
404 Spanish-American studies

425 FOREIGN LANGUAGES
426 Classical languages
427 Eastern languages
428 French
429 German
430 interpreting/translating
431 Italian
432 linguistics
433 Russian
434 Spanish

450 FORESTRY AND CONSERVATION

475 GEOGRAPHY

500 HEALTH AND MEDICAL PROFESSIONS
501 dental assisting
502 dental hygiene
503 dental technology
504 health and safety
505 laboratory technology
506 medical assisting
507 medical records librarian
508 medical technology
509 nursing—practical
510 nursing—registered
511 occupational therapy
512 optometry
513 pharmacy
514 physical therapy
515 predentistry/dentistry
516 premedicine/medicine
517 preveterinary medicine/veterinary medicine
518 radiology and X-ray technology

550 HISTORY AND CULTURES
551 American
552 ancient
553 area and regional
554 European

575 HOME ECONOMICS
576 clothing and textiles
577 family relations
578 food and nutrition
579 infant and child care
580 institution management

600 LIBRARY SCIENCE

625 MATHEMATICS
626 statistics

650 MILITARY SCIENCE
651 air science
652 merchant marine
653 military science—army
654 naval science

675 MUSIC
676 composition and theory
677 instrumental music
678 music history
679 voice

700 PHILOSOPHY AND RELIGION
701 ministry
702 philosophy
703 religion
704 theology

725 PHYSICAL SCIENCES
726 astronomy
727 chemistry
728 earth science
729 geology
730 meteorology
731 oceanography
732 physical sciences
733 physics

750 PSYCHOLOGY
751 child psychology
752 experimental psychology
753 general psychology
754 social psychology

775 SOCIAL SCIENCES
776 anthropology
777 correction administration
778 economics
779 fire science
780 foreign service
781 government service/politics
782 industrial relations
783 international relations
784 law enforcement/police science
785 political science
786 prelaw/law
787 public administration
788 social work
789 sociology

800 THEATER ARTS
801 acting
802 dance
803 drama
804 theater arts

825 TRADE AND VOCATIONAL
826 airline hosting
827 automotive maintenance
828 aviation maintenance
829 building construction
830 carpentry
831 cosmetology
832 mortuary service

900 OTHER

999 UNDECIDED

Appendix B

Supplementary Tables for Chapter IV

TABLE B-1

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR SCHOOL A

MATRIX OF ORIGINAL N'S:

	SDQ#4:	SDQ#20:	SDQ#21:	SDQ#22:	SDQ#24:	SDQ#44A:	SDQ#45A:	SDQ#46A:	SDQ#47:	SDQ#48:	SDQ#49:	SDQ#51:
SDQ#4:	41.	41.	40.	41.	40.	41.	41.	41.	41.	41.	41.	41.
SDQ#20:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#21:	40.	41.	41.	41.	39.	41.	41.	41.	41.	41.	41.	41.
SDQ#22:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#24:	40.	40.	39.	40.	40.	40.	40.	40.	40.	40.	40.	40.
SDQ#44A:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#45A:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#46A:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#47:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#48:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#49:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#51:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#52:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#54:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#57:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#5:	39.	40.	39.	40.	38.	40.	40.	40.	40.	40.	40.	40.
SDQ#12:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#12H:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#18A:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#23:	40.	41.	40.	41.	39.	41.	41.	41.	41.	41.	41.	41.
SDQ#50:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#53:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#56:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#58:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SDQ#59:	40.	41.	40.	41.	39.	41.	41.	41.	41.	41.	41.	41.
SDQ#60:	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
H.S.GPA	39.	40.	39.	40.	38.	40.	40.	40.	40.	40.	40.	40.
SAT-V	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SAT-M	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
TSWE SCORE	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
AGE	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
SEX	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.
RACE	39.	40.	39.	40.	38.	40.	40.	40.	40.	40.	40.	40.
ED.LEV.	35.	36.	35.	36.	34.	36.	36.	36.	36.	36.	36.	36.
ONSET	35.	36.	35.	36.	34.	36.	36.	36.	36.	36.	36.	36.
HEARING(0-1)	40.	41.	40.	41.	39.	41.	41.	41.	41.	41.	41.	41.
HEARING DISC.	37.	38.	37.	38.	36.	38.	38.	38.	38.	38.	38.	38.
LIP-READING	36.	37.	36.	37.	35.	37.	37.	37.	37.	37.	37.	37.
SPEECH CLARITY	35.	36.	35.	36.	34.	36.	36.	36.	36.	36.	36.	36.
H.S.GPA-SCHOOL	39.	39.	38.	39.	38.	39.	39.	39.	39.	39.	39.	39.
F.Y.GPA*	41.	42.	41.	42.	40.	42.	42.	42.	42.	42.	42.	42.

TABLE B-1 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR SCHOOL A

MATRIX OF ORIGINAL N'S:

	SDQ#52:	SDQ#54:	SDQ#57:	SDQ#5:	SDQ#12:	SDQ#12H:	SDQ#18A:	SDQ#23:	SDQ#50:	SDQ#53:	SDQ#56:	SDQ#58:
SDQ#4:	41.	41.	41.	39.	41.	41.	41.	40.	41.	41.	41.	41.
SDQ#20:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#21:	41.	41.	41.	39.	41.	41.	41.	40.	41.	41.	41.	41.
SDQ#22:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#24:	40.	40.	40.	38.	40.	40.	40.	39.	40.	40.	40.	40.
SDQ#44A:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#45A:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#46A:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#47:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#48:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#49:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#51:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#52:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#54:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#57:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#5:	40.	40.	40.	40.	40.	40.	40.	39.	40.	40.	40.	40.
SDQ#12:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#12H:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#18A:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#23:	41.	41.	41.	39.	41.	41.	41.	41.	41.	41.	41.	41.
SDQ#50:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#53:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#56:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#58:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SDQ#59:	41.	41.	41.	39.	41.	41.	41.	40.	41.	41.	41.	41.
SDQ#60:	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
H.S.GPA	40.	40.	40.	38.	40.	40.	40.	39.	40.	40.	40.	40.
SAT-V	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SAT-M	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
TSWE SCORE	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
AGE	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
SEX	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.
RACE	40.	40.	40.	38.	40.	40.	40.	39.	40.	40.	40.	40.
ED.LEV.	36.	36.	36.	35.	36.	36.	36.	35.	36.	36.	36.	36.
ONSET	36.	36.	36.	35.	36.	36.	36.	35.	36.	36.	36.	36.
HEARING (0-1)	41.	41.	41.	39.	41.	41.	41.	40.	41.	41.	41.	41.
HEARING DISC.	38.	38.	38.	36.	38.	38.	38.	37.	38.	38.	38.	38.
LIP-READING	37.	37.	37.	35.	37.	37.	37.	36.	37.	37.	37.	37.
SPEECH CLARITY	36.	36.	36.	34.	36.	36.	36.	35.	36.	36.	36.	36.
H.S.GPA-SCHOOL	39.	39.	39.	37.	39.	39.	39.	38.	39.	39.	39.	39.
F.Y.GPA*	42.	42.	42.	40.	42.	42.	42.	41.	42.	42.	42.	42.

TABLE B-1 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND
STANDARD DEVIATIONS FROM DIAGONAL OF
RECONSTRUCTED MATRIX FOR SCHOOL A

MATRIX OF ORIGINAL N'S:

	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-M	TSWE SCORE	AGE	SEX	RACE	ED.LEV.	ONSET	HEARING (0-1)
SDQ#4:	40.	41.	39.	41.	41.	41.	41.	41.	39.	35.	35.	40.
SDQ#20:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#21:	40.	41.	39.	41.	41.	41.	41.	41.	39.	35.	35.	40.
SDQ#22:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#24:	39.	40.	38.	40.	40.	40.	40.	40.	38.	34.	34.	39.
SDQ#44A:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#45A:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#46A:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#47:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#48:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#49:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#51:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#52:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#54:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#57:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#5:	39.	40.	38.	40.	40.	40.	40.	40.	38.	35.	35.	39.
SDQ#12:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#12H:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#18A:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#23:	40.	41.	39.	41.	41.	41.	41.	41.	39.	35.	35.	40.
SDQ#50:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#53:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#56:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#58:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
SDQ#59:	41.	41.	39.	41.	41.	41.	41.	41.	39.	35.	35.	40.
SDQ#60:	41.	42.	40.	42.	42.	42.	42.	42.	40.	36.	36.	41.
H.S.GPA	39.	40.	40.	40.	40.	40.	40.	40.	38.	35.	35.	39.
SAT-V	41.	42.	40.	45.	45.	45.	45.	45.	40.	39.	39.	44.
SAT-M	41.	42.	40.	45.	45.	45.	45.	45.	40.	39.	39.	44.
TSWE SCORE	41.	42.	40.	45.	45.	45.	45.	45.	40.	39.	39.	44.
AGE	41.	42.	40.	45.	45.	45.	45.	45.	40.	39.	39.	44.
SEX	41.	42.	40.	45.	45.	45.	45.	45.	40.	39.	39.	44.
RACE	39.	40.	38.	40.	40.	40.	40.	40.	40.	34.	34.	39.
ED.LEV.	35.	36.	35.	39.	39.	39.	39.	39.	34.	39.	39.	38.
ONSET	35.	36.	35.	39.	39.	39.	39.	39.	34.	39.	39.	38.
HEARING (0-1)	40.	41.	39.	44.	44.	44.	44.	44.	39.	38.	38.	44.
HEARING DISC.	37.	38.	36.	41.	41.	41.	41.	41.	36.	36.	36.	40.
LIP-READING	36.	37.	35.	40.	40.	40.	40.	40.	35.	35.	35.	39.
SPEECH	35.	36.	34.	39.	39.	39.	39.	39.	34.	35.	35.	38.
H.S.GPA-SCHOOL	38.	39.	37.	42.	42.	42.	42.	42.	37.	36.	36.	41.
F.Y.GPA*	41.	42.	40.	45.	45.	45.	45.	45.	40.	39.	39.	44.

TABLE B-1 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND
STANDARD DEVIATIONS FROM DIAGONAL OF
RECONSTRUCTED MATRIX FOR SCHOOL A

MATRIX OF ORIGINAL N'S:

	HEAR.(0-1)	LIP-READ	SPEECH	H.S.GPA-SC.	F.Y.GPA*
SDQ#4:	37.	36.	35.	39.	41.
SDQ#20:	38.	37.	36.	39.	42.
SDQ#21:	37.	36.	35.	38.	41.
SDQ#22:	38.	37.	36.	39.	42.
SDQ#24:	36.	35.	34.	38.	40.
SDQ#44A:	38.	37.	36.	39.	42.
SDQ#45A:	38.	37.	36.	39.	42.
SDQ#46A:	38.	37.	36.	39.	42.
SDQ#47:	38.	37.	36.	39.	42.
SDQ#48:	38.	37.	36.	39.	42.
SDQ#49:	38.	37.	36.	39.	42.
SDQ#51:	38.	37.	36.	39.	42.
SDQ#52:	38.	37.	36.	39.	42.
SDQ#54:	38.	37.	36.	39.	42.
SDQ#57:	38.	37.	36.	39.	42.
SDQ#5:	36.	35.	34.	37.	40.
SDQ#12:	38.	37.	36.	39.	42.
SDQ#12H:	38.	37.	36.	39.	42.
SDQ#18A:	38.	37.	36.	39.	42.
SDQ#23:	37.	36.	35.	38.	41.
SDQ#50:	38.	37.	36.	39.	42.
SDQ#53:	38.	37.	36.	39.	42.
SDQ#56:	38.	37.	36.	39.	42.
SDQ#58:	38.	37.	36.	39.	42.
SDQ#59:	37.	36.	35.	38.	41.
SDQ#60:	38.	37.	36.	39.	42.
H.S.GPA	36.	35.	34.	37.	40.
SAT-V	41.	40.	39.	42.	45.
SAT-Q	41.	40.	39.	42.	45.
TSWE SCO	41.	40.	39.	42.	45.
AGE	41.	40.	39.	42.	45.
SEX	41.	40.	39.	42.	45.
RACE	36.	35.	34.	37.	40.
ED.LEV.	36.	35.	35.	36.	39.
ONSET	36.	35.	35.	36.	39.
HEARING	40.	39.	38.	41.	44.
HEAR-NO	41.	39.	39.	38.	41.
LIP-RD	39.	40.	39.	37.	40.
SPEECH	39.	39.	39.	36.	39.
HSGPA-SC	38.	37.	36.	42.	42.
F.Y.GPA*	41.	40.	39.	42.	45.

TABLE B-1 (CONCLUDED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND
STANDARD DEVIATIONS FROM DIAGONAL OF
RECONSTRUCTED MATRIX FOR SCHOOL A

VALUES FROM DIAGONAL OF RECONSTRUCTED MATRIX AFTER SUBSTITUTING MEANS, SIGMAS AND COVARIANCES OF EXISTING DATA FOR MISSING DATA:

THE NUMBER OF OBSERVATIONS IS 45.

VARIABLE	SUMS	SUMS OF SQUARES	MEAN	SIGMA(N)	SIGMA(N-1)
SDQ#4:	133.9024	469.9146	2.9756	1.2603	1.2745
SDQ#20:	110.3571	354.7795	2.4524	1.3674	1.3829
SDQ#21:	126.2195	446.9133	2.8049	1.4367	1.4529
SDQ#22:	105.0000	300.0894	2.3333	1.1064	1.1189
SDQ#24:	192.3750	932.9390	4.2750	1.5673	1.5850
SDQ#44A:	102.8571	349.4714	2.2857	1.5942	1.6122
SDQ#45A:	109.2857	385.9099	2.4286	1.6364	1.6549
SDQ#46A:	103.9286	352.6829	2.3095	1.5822	1.6001
SDQ#47:	123.2143	376.1344	2.7381	0.9281	0.9386
SDQ#48:	122.1429	383.6560	2.7143	1.0763	1.0884
SDQ#49:	115.7143	340.7845	2.5714	0.9802	0.9913
SDQ#51:	158.5714	604.3597	3.5238	1.0065	1.0178
SDQ#52:	128.5714	424.3783	2.8571	1.1258	1.1385
SDQ#54:	82.5000	185.4126	1.8333	0.8713	0.8811
SDQ#57:	95.3571	243.2812	2.1190	0.9570	0.9678
SDQ#5:	196.8750	950.8794	4.3750	1.4107	1.4266
SDQ#12:	71.7857	211.2284	1.5952	1.4660	1.4826
SDQ#12H:	10.7143	21.4593	0.2381	0.6482	0.6555
SDQ#18A:	23.5714	49.3458	0.5238	0.9068	0.9170
SDQ#23:	88.9024	236.1097	1.9756	1.1592	1.1723
SDQ#50:	130.7143	437.2363	2.9048	1.1308	1.1436
SDQ#53:	121.0714	380.4460	2.6905	1.1026	1.1150
SDQ#56:	145.7143	529.3791	3.2381	1.1308	1.1436
SDQ#58:	109.2857	308.6416	2.4286	0.9802	0.9913
SDQ#59:	107.5610	305.2287	2.3902	1.0342	1.0459
SDQ160:	138.2143	485.4561	3.0714	1.1637	1.1769
H.S.GPA	137.6887	436.1372	3.0597	0.5743	0.5808
SAT-V	14800.0000	5654400.0000	328.8890	132.2320	133.7270
SAT-M	17030.0000	6798300.0000	378.4440	88.6180	89.6190
TSWE SCORE	1530.0000	59250.0000	34.0000	12.6754	12.8187
AGE	841.0000	15755.0000	18.6889	0.9146	0.9250
SEX	78.0000	144.0000	1.7333	0.4422	0.4472
RACE	37.1250	37.1435	0.8250	0.3805	0.3848
ED.LEV.	109.0385	286.5203	2.4231	0.7041	0.7121
ONSET	83.0769	198.6197	1.8462	1.0027	1.0141
HEARING (0-1)	110.4545	321.1622	2.4545	1.0546	1.0665
HEARING DISC.	104.2683	368.5131	2.3171	1.6794	1.6984
LIP-READING	164.8125	645.0239	3.6625	0.9591	0.9700
SPEECH CLARITY	160.3846	617.4680	3.5641	1.0093	1.0207
H.S.GPA-SCHOOL	147.1071	506.8599	3.2690	0.7595	0.7681
F.Y.GPA*	119.2900	351.4576	2.6509	0.8848	0.8948

TABLE B-2

MATRIX OF ORIGINAL N'S WITH N, MEANS AND
STANDARD DEVIATIONS FROM DIAGONAL OF
RECONSTRUCTED MATRIX FOR SCHOOL B

MATRIX OF ORIGINAL N'S:

	SDQ#4:	SDQ#20:	SDQ#21:	SDQ#22:	SDQ#24:	SDQ#44A:	SDQ#45A:	SDQ#46A:	SDQ#47:	SDQ#48:	SDQ#49:	SDQ#51:
SDQ#4:	165.	158.	161.	164.	162.	165.	165.	165.	157.	157.	157.	156.
SDQ#20:	158.	162.	160.	162.	161.	162.	162.	162.	157.	157.	157.	156.
SDQ#21:	161.	160.	165.	165.	163.	165.	165.	165.	159.	159.	159.	159.
SDQ#22:	164.	162.	165.	168.	166.	168.	168.	168.	161.	161.	161.	160.
SDQ#24:	162.	161.	163.	166.	166.	166.	166.	166.	159.	159.	159.	158.
SDQ#44A:	165.	162.	165.	168.	166.	169.	169.	169.	161.	161.	161.	160.
SDQ#45A:	165.	162.	165.	168.	166.	169.	169.	169.	161.	161.	161.	160.
SDQ#46A:	165.	162.	165.	168.	166.	169.	169.	169.	161.	161.	161.	160.
SDQ#47:	157.	157.	159.	161.	159.	161.	161.	161.	161.	160.	160.	159.
SDQ#48:	157.	157.	159.	161.	159.	161.	161.	161.	160.	161.	161.	160.
SDQ#49:	157.	157.	159.	161.	159.	161.	161.	161.	160.	161.	161.	160.
SDQ#51:	156.	156.	159.	160.	158.	160.	160.	160.	159.	160.	160.	160.
SDQ#52:	157.	157.	159.	161.	159.	161.	161.	161.	160.	161.	161.	160.
SDQ#54:	156.	156.	158.	160.	158.	160.	160.	160.	159.	160.	160.	159.
SDQ#57:	155.	155.	157.	159.	157.	159.	159.	159.	158.	159.	159.	158.
SDQ#5:	148.	142.	145.	148.	146.	149.	149.	149.	142.	142.	142.	141.
SDQ#12:	165.	162.	165.	168.	166.	169.	169.	169.	161.	161.	161.	160.
SDQ#12H:	165.	162.	165.	168.	166.	169.	169.	169.	161.	161.	161.	160.
SDQ#18A:	165.	162.	165.	168.	166.	169.	169.	169.	161.	161.	161.	160.
SDQ#23:	163.	161.	164.	167.	165.	167.	167.	167.	160.	160.	160.	159.
SDQ#50:	157.	157.	159.	161.	159.	161.	161.	161.	160.	161.	161.	160.
SDQ#53:	157.	156.	159.	161.	159.	161.	161.	161.	159.	160.	160.	159.
SDQ#56:	155.	155.	157.	159.	157.	159.	159.	159.	158.	159.	159.	158.
SDQ#58:	155.	155.	157.	159.	157.	159.	159.	159.	158.	159.	159.	158.
SDQ#59:	156.	155.	158.	160.	158.	160.	160.	160.	158.	159.	159.	158.
SDQ#60:	155.	155.	157.	159.	157.	159.	159.	159.	158.	159.	159.	158.
H.S.GPA	158.	156.	158.	161.	159.	161.	161.	161.	154.	154.	154.	153.
SAT-V	165.	162.	165.	168.	166.	169.	169.	169.	161.	161.	161.	160.
SAT-M	165.	162.	165.	168.	166.	169.	169.	169.	161.	161.	161.	160.
TSWE SCORE	165.	162.	165.	168.	166.	169.	169.	169.	161.	161.	161.	160.
AGE	36.	35.	35.	36.	36.	36.	36.	36.	34.	34.	34.	34.
SEX	165.	162.	165.	168.	166.	169.	169.	169.	161.	161.	161.	160.
RACE	161.	159.	163.	165.	163.	165.	165.	165.	158.	158.	158.	158.
ED.LEV.	115.	113.	113.	116.	114.	116.	116.	116.	110.	110.	110.	109.
OCC.LEV.	98.	97.	96.	99.	98.	99.	99.	99.	94.	94.	94.	93.
ONSET	163.	159.	162.	165.	163.	166.	166.	166.	158.	158.	158.	157.
HEARING (0-1)	165.	162.	165.	168.	166.	169.	169.	169.	161.	161.	161.	160.
HEARING DISC.	129.	125.	128.	131.	129.	132.	132.	132.	126.	126.	126.	125.
STANFORD-T.	82.	79.	83.	84.	83.	84.	84.	84.	79.	79.	79.	79.
CALIF. RDG.	128.	126.	129.	131.	129.	132.	132.	132.	126.	126.	126.	125.
F.Y.GPA*	165.	162.	165.	168.	166.	169.	169.	169.	161.	161.	161.	160.

TABLE B-2 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND
STANDARD DEVIATIONS FROM DIAGONAL OF
RECONSTRUCTED MATRIX FOR SCHOOL B

MATRIX OF ORIGINAL N'S:

	SDQ#52:	SDQ#54:	SDQ#57:	SDQ#5:	SDQ#12:	SDQ#12H:	SDQ#18A:	SDQ#23:	SDQ#50:	SDQ#53:	SDQ#56:	SDQ#58:
SDQ#4:	157.	156.	155.	148.	165.	165.	165.	163.	157.	157.	155.	155.
SDQ#20:	157.	156.	155.	142.	162.	162.	162.	161.	157.	156.	155.	155.
SDQ#21:	159.	158.	157.	145.	165.	155.	165.	164.	159.	159.	157.	157.
SDQ#22:	161.	160.	159.	148.	168.	168.	168.	167.	161.	161.	159.	159.
SDQ#24:	159.	158.	157.	146.	166.	166.	166.	165.	159.	159.	157.	157.
SDQ#44A:	161.	160.	159.	149.	169.	169.	169.	167.	161.	161.	159.	159.
SDQ#45A:	161.	160.	159.	149.	169.	169.	169.	167.	161.	161.	159.	159.
SDQ#46A:	161.	160.	159.	149.	169.	169.	169.	167.	161.	161.	159.	159.
SDQ#47:	160.	159.	158.	142.	161.	161.	161.	160.	160.	159.	158.	158.
SDQ#48:	161.	160.	159.	142.	161.	161.	161.	160.	161.	160.	159.	159.
SDQ#49:	161.	160.	159.	142.	161.	161.	161.	160.	161.	160.	159.	159.
SDQ#51:	160.	159.	158.	141.	160.	160.	160.	159.	160.	159.	158.	158.
SDQ#52:	161.	160.	159.	142.	161.	161.	161.	160.	161.	160.	159.	159.
SDQ#54:	160.	160.	158.	141.	160.	160.	160.	159.	160.	159.	158.	158.
SDQ#57:	159.	158.	159.	140.	159.	159.	159.	158.	159.	158.	158.	159.
SDQ#5:	142.	141.	140.	149.	149.	149.	149.	147.	142.	142.	140.	140.
SDQ#12:	161.	160.	159.	149.	169.	169.	169.	167.	161.	161.	159.	159.
SDQ#12H:	161.	160.	159.	149.	169.	169.	169.	167.	161.	161.	159.	159.
SDQ#18A:	161.	160.	159.	149.	169.	169.	169.	167.	161.	161.	159.	159.
SDQ#23:	160.	159.	158.	147.	167.	167.	167.	167.	160.	160.	158.	158.
SDQ#50:	161.	160.	159.	142.	161.	161.	161.	160.	161.	160.	159.	159.
SDQ#53:	160.	159.	158.	142.	161.	161.	161.	160.	160.	161.	158.	158.
SDQ#56:	159.	158.	158.	140.	159.	159.	159.	158.	159.	158.	159.	158.
SDQ#58:	159.	158.	159.	140.	159.	159.	159.	158.	159.	158.	158.	159.
SDQ#59:	159.	158.	158.	141.	160.	160.	160.	159.	159.	159.	158.	158.
SDQ#60:	159.	158.	158.	140.	159.	159.	159.	158.	159.	158.	158.	158.
H.S.GPA	154.	153.	152.	144.	161.	161.	161.	160.	154.	154.	152.	152.
SAT-V	161.	160.	159.	149.	169.	169.	169.	167.	161.	161.	159.	159.
SAT-M	161.	160.	159.	149.	169.	169.	169.	167.	161.	161.	159.	159.
TSWE SCORE	161.	160.	159.	149.	169.	169.	169.	167.	161.	161.	159.	159.
AGE	34.	34.	33.	32.	36.	36.	36.	35.	34.	34.	34.	33.
SEX	161.	160.	159.	149.	169.	169.	169.	167.	161.	161.	159.	159.
RACE	158.	158.	156.	145.	165.	165.	165.	164.	158.	158.	156.	156.
ED.LEV.	110.	110.	108.	101.	116.	116.	116.	115.	110.	110.	108.	108.
OCC.LEV.	94.	94.	93.	85.	99.	99.	99.	98.	94.	94.	92.	93.
ONSET	158.	157.	156.	147.	166.	166.	166.	164.	158.	158.	156.	156.
HEARING (0-1)	161.	160.	159.	149.	169.	169.	169.	167.	161.	161.	159.	159.
HEARING DISC.	126.	125.	124.	117.	132.	132.	132.	130.	126.	126.	124.	124.
STANFORD-T.	79.	79.	79.	72.	84.	84.	84.	84.	79.	79.	79.	79.
CALIF. RDG.	126.	125.	125.	116.	132.	132.	132.	131.	126.	126.	124.	125.
F.Y.GPA*	161.	160.	159.	149.	169.	169.	169.	167.	161.	161.	159.	159.

TABLE B-2 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR SCHOOL B

MATRIX OF ORIGINAL N'S:

	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-Q	TSWE SCO	AGE	SEX	RACE	ED.LEV.	OCC.LEV.	ONSET
SDQ#4:	156.	155.	158.	165.	165.	165.	36.	165.	161.	115.	98.	163.
SDQ#20:	155.	155.	156.	162.	162.	162.	35.	162.	159.	113.	97.	159.
SDQ#21:	158.	157.	158.	165.	165.	165.	35.	165.	163.	113.	96.	162.
SDQ#22:	160.	159.	161.	168.	168.	168.	36.	168.	165.	116.	99.	165.
SDQ#24:	158.	157.	159.	166.	166.	166.	36.	166.	163.	114.	98.	163.
SDQ#44A:	160.	159.	161.	169.	169.	169.	36.	169.	165.	116.	99.	166.
SDQ#45A:	160.	159.	161.	169.	169.	169.	36.	169.	165.	116.	99.	166.
SDQ#46A:	160.	159.	161.	169.	169.	169.	36.	169.	165.	116.	99.	166.
SDQ#47:	158.	158.	154.	161.	161.	161.	34.	161.	158.	110.	94.	158.
SDQ#48:	159.	159.	154.	161.	161.	161.	34.	161.	158.	110.	94.	158.
SDQ#49:	159.	159.	154.	161.	161.	161.	34.	161.	158.	110.	94.	158.
SDQ#51:	158.	158.	153.	160.	160.	160.	34.	160.	158.	109.	93.	157.
SDQ#52:	159.	159.	154.	161.	161.	161.	34.	161.	158.	110.	94.	158.
SDQ#54:	158.	158.	153.	160.	160.	160.	34.	160.	158.	110.	94.	157.
SDQ#57:	158.	158.	152.	159.	159.	159.	33.	159.	156.	108.	93.	156.
SDQ#5:	141.	140.	144.	149.	149.	149.	32.	149.	145.	101.	85.	147.
SDQ#12:	160.	159.	161.	169.	169.	169.	36.	169.	165.	116.	99.	166.
SDQ#12H:	160.	159.	161.	169.	169.	169.	36.	169.	165.	116.	99.	166.
SDQ#18A:	160.	159.	161.	169.	169.	169.	36.	169.	165.	116.	99.	166.
SDQ#23:	159.	158.	160.	167.	167.	167.	35.	167.	164.	115.	98.	164.
SDQ#50:	159.	159.	154.	161.	161.	161.	34.	161.	158.	110.	94.	158.
SDQ#53:	159.	158.	154.	161.	161.	161.	34.	161.	158.	110.	94.	158.
SDQ#56:	158.	158.	152.	159.	159.	159.	34.	159.	156.	108.	92.	156.
SDQ#58:	158.	158.	152.	159.	159.	159.	33.	159.	156.	108.	93.	156.
SDQ#59:	160.	158.	153.	160.	160.	160.	34.	160.	157.	108.	92.	157.
SDQ#60:	158.	159.	152.	159.	159.	159.	34.	159.	156.	108.	93.	156.
H.S.GPA	153.	152.	161.	161.	161.	161.	35.	161.	158.	110.	93.	158.
SAT-V	160.	159.	161.	206.	206.	204.	43.	206.	166.	145.	123.	202.
SAT-M	160.	159.	161.	206.	206.	204.	43.	206.	166.	145.	123.	202.
TSWE SCORE	160.	159.	161.	204.	204.	204.	41.	204.	166.	143.	121.	200.
AGE	34.	34.	35.	43.	43.	41.	43.	43.	36.	39.	36.	41.
SEX	160.	159.	161.	206.	206.	204.	43.	206.	166.	145.	123.	202.
RACE	157.	156.	158.	166.	166.	166.	36.	166.	166.	115.	98.	163.
ED.LEV.	108.	108.	110.	145.	145.	143.	39.	145.	115.	145.	123.	142.
OCC.LEV.	92.	93.	93.	123.	123.	121.	36.	123.	98.	123.	123.	120.
ONSET	157.	156.	158.	202.	202.	200.	41.	202.	163.	142.	120.	202.
HEARING (0-1)	160.	159.	161.	206.	206.	204.	43.	206.	166.	145.	123.	202.
HEARING DISC.	125.	124.	124.	161.	161.	159.	36.	161.	129.	112.	96.	160.
STANFORD-T.	79.	78.	79.	114.	114.	112.	18.	114.	84.	86.	71.	112.
CALIF. RDG.	125.	124.	125.	162.	162.	162.	0.	162.	129.	106.	87.	160.
F.Y.GPA*	160.	159.	161.	206.	206.	204.	43.	206.	166.	145.	123.	202.

TABLE B-2 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR SCHOOL B

MATRIX OF ORIGINAL N'S:

	HEAR.(0-1)	HEAR-D.	STNF.-T.	CAL.RDG.	F.Y.GPA*
SDQ#4:	165.	129.	82.	128.	165.
SDQ#20:	162.	125.	79.	126.	162.
SDQ#21:	165.	128.	83.	129.	165.
SDQ#22:	168.	131.	84.	131.	168.
SDQ#24:	166.	129.	83.	129.	166.
SDQ#44A:	169.	132.	84.	132.	169.
SDQ#45A:	169.	132.	84.	132.	169.
SDQ#46A:	169.	132.	84.	132.	169.
SDQ#47:	161.	126.	79.	126.	161.
SDQ#48:	161.	126.	79.	126.	161.
SDQ#49:	161.	126.	79.	126.	161.
SDQ#51:	160.	125.	79.	125.	160.
SDQ#52:	161.	126.	79.	126.	161.
SDQ#54:	160.	125.	79.	125.	160.
SDQ#57:	159.	124.	79.	125.	159.
SDQ#5:	149.	117.	72.	116.	149.
SDQ#12:	169.	132.	84.	132.	169.
SDQ#12H:	169.	132.	84.	132.	169.
SDQ#18A:	169.	132.	84.	132.	169.
SDQ#23:	167.	130.	84.	131.	167.
SDQ#50:	161.	126.	79.	126.	161.
SDQ#53:	161.	126.	79.	126.	161.
SDQ#56:	159.	124.	79.	124.	159.
SDQ#58:	159.	124.	79.	125.	159.
SDQ#59:	160.	125.	79.	125.	160.
SDQ#60:	159.	124.	78.	124.	159.
H.S.GPA	161.	124.	79.	125.	161.
SAT-V	206.	161.	114.	162.	206.
SAT-M	206.	161.	114.	162.	206.
TSWE SCORE	204.	159.	112.	162.	204.
AGE	43.	36.	18.	0.	43.
SEX	206.	161.	114.	162.	206.
RACE	166.	129.	84.	129.	166.
ED.LEV.	145.	112.	86.	106.	145.
OCC.LEV.	123.	96.	71.	87.	123.
ONSET	202.	160.	112.	160.	202.
HEARING(0-1)	206.	161.	114.	162.	206.
HEARING DISC.	161.	161.	92.	125.	161.
STNF.ORD-T.	114.	92.	114.	95.	114.
CALIF. RDG.	162.	125.	95.	162.	162.
F.Y.GPA*	206.	161.	114.	162.	206.

TABLE B-2 (CONCLUDED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND
STANDARD DEVIATIONS FROM DIAGONAL OF
RECONSTRUCTED MATRIX FOR SCHOOL B

VALUES FROM DIAGONAL OF RECONSTRUCTED MATRIX AFTER SUBSTITUTING MEANS, SIGMAS AND COVARIANCES OF EXISTING DATA FOR MISSING DATA:

THE NUMBER OF OBSERVATIONS IS 206.

VARIABLE	SUMS	SUMS OF SQUARES	MEAN	SIGMA(N)	SIGMA(N-1)
SDQ#4:	644.2182	2410.0550	3.1273	1.3854	1.3888
SDQ#20:	509.9136	1603.9466	2.4753	1.2880	1.2912
SDQ#21:	593.0303	2149.1781	2.8788	1.4647	1.4683
SDQ#22:	387.4762	887.9375	1.8810	0.8789	0.8810
SDQ#24:	738.3735	3086.7946	3.5843	1.4618	1.4654
SDQ#44A:	494.8876	1997.4789	2.4024	1.9812	1.9860
SDQ#45A:	397.3728	1163.2876	1.9290	1.3878	1.3912
SDQ#46A:	381.5266	1142.6076	1.8521	1.4548	1.4584
SDQ#47:	486.2112	1361.6832	2.3602	1.0195	1.0220
SDQ#48:	578.3354	1906.8457	2.8075	1.1725	1.1753
SDQ#49:	642.3106	2252.2657	3.1180	1.1006	1.1033
SDQ#51:	713.2750	2686.0284	3.4625	1.0247	1.0272
SDQ#52:	560.4224	1753.2309	2.7205	1.0534	1.0560
SDQ#54:	515.0000	1529.8899	2.5000	1.0847	1.0874
SDQ#57:	470.3019	1258.2913	2.2830	0.9466	0.9489
SDQ#5:	814.3221	3541.3128	3.9530	1.2508	1.2538
SDQ#12:	215.7515	581.8120	1.0473	1.3143	1.3175
SDQ#12H:	36.5680	92.7312	0.1775	0.6470	0.6486
SDQ#18A:	141.3964	331.8010	0.6864	1.0675	1.0701
SDQ#23:	356.4910	818.0615	1.7305	0.9881	0.9905
SDQ#50:	490.0497	1393.6896	2.3789	1.0519	1.0544
SDQ#53:	644.8696	2270.1814	3.1304	1.1048	1.1075
SDQ#56:	638.7296	2170.3997	3.1006	0.9602	0.9626
SDQ#58:	535.0818	1639.2905	2.5975	1.1004	1.1030
SDQ#59:	486.6750	1375.3664	2.3625	1.0465	1.0490
SDQ#60:	520.8302	1544.6808	2.5283	1.0517	1.0543
H.S.GPA	585.3214	1734.7826	2.8414	0.5898	0.5913
SAT-V	59510.0000	19125500.0000	288.8830	96.8950	97.1310
SAT-M	79380.0000	32733600.0000	385.3400	102.0500	102.2990
TSWE SCORE	5828.5882	184005.3640	28.2941	9.6267	9.6501
AGE	3885.2558	73722.6930	18.8605	1.4697	1.4733
SEX	295.0000	473.0000	1.4320	0.4954	0.4966
RACE	188.6265	188.6452	0.9157	0.2781	0.2787
ED.LEV.	618.0000	2052.5937	3.0000	0.9819	0.9843
OCC.LEV.	1036.6992	5586.6633	5.0325	1.3392	1.3425
ONSET	100.9604	635.3932	0.4901	1.6865	1.6906
HEARING(0-1)	429.0000	1009.0000	2.0825	0.7491	0.7509
HEARING DISC.	614.1615	2001.3751	2.9814	0.9093	0.9115
STANFORD-T.	1993.3210	19712.4904	9.6763	1.4355	1.4390
CALIF. RDG.	1858.0691	17785.7964	9.0198	2.2322	2.2377
F.Y.GPA*	551.3499	1568.9248	2.6765	0.6728	0.6745

TABLE B-3

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR SCHOOL C

MATRIX OF ORIGINAL N'S:

	SDQ#4:	SDQ#20:	SDQ#21:	SDQ#22:	SDQ#24:	SDQ#44A:	SDQ#45A:	SDQ#46A:	SDQ#47:	SDQ#48:	SDQ#49:	SDQ#51:
SDQ#4:	63.	60.	62.	60.	60.	63.	63.	63.	59.	61.	61.	62.
SDQ#20:	60.	61.	61.	60.	60.	61.	61.	61.	59.	61.	61.	61.
SDQ#21:	62.	61.	63.	60.	60.	63.	63.	63.	60.	62.	62.	62.
SDQ#22:	60.	60.	60.	61.	60.	61.	61.	61.	58.	60.	60.	61.
SDQ#24:	60.	60.	60.	60.	61.	61.	61.	61.	58.	60.	60.	61.
SDQ#44A:	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SDQ#45A:	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SDQ#46A:	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SDQ#47:	59.	59.	60.	58.	58.	61.	61.	61.	61.	61.	61.	61.
SDQ#48:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#49:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#51:	62.	61.	62.	61.	61.	64.	64.	64.	61.	63.	63.	64.
SDQ#52:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#54:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#57:	60.	60.	61.	59.	59.	62.	62.	62.	60.	62.	62.	62.
SDQ#5:	59.	58.	58.	58.	58.	59.	59.	59.	56.	58.	58.	59.
SDQ#12:	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SDQ#12H:	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SDQ#18A:	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SDQ#23:	61.	60.	62.	59.	59.	62.	62.	62.	59.	61.	61.	61.
SDQ#50:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#53:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#56:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#58:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#59:	62.	61.	62.	61.	61.	64.	64.	64.	61.	63.	63.	64.
SDQ#60:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
H.S.GPA	62.	59.	61.	59.	60.	62.	62.	62.	58.	60.	60.	61.
SAT-V	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SAT-M	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
TSWE SCORE	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
AGE	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SEX	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
RACE	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
ONSET	61.	59.	61.	59.	59.	63.	63.	63.	60.	61.	61.	62.
HEARING (0-1)	46.	45.	46.	45.	45.	48.	48.	48.	45.	46.	46.	47.
H.S.GPA-SCHOOL	60.	59.	60.	59.	59.	62.	62.	62.	58.	60.	60.	61.
CUM.GPA	53.	51.	53.	51.	51.	55.	55.	55.	51.	53.	53.	54.
F.Y.GPA*	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.

TABLE B-3 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND
STANDARD DEVIATIONS FROM DIAGONAL OF
RECONSTRUCTED MATRIX FOR SCHOOL C

MATRIX OF ORIGINAL N'S:

	SDQ852:	SDQ854:	SDQ857:	SDQ85:	SDQ812:	SDQ812H:	SDQ818A:	SDQ823:	SDQ850:	SDQ853:	SDQ856:	SDQ858:
SDQ84:	61.	61.	60.	59.	63.	63.	63.	61.	61.	61.	61.	61.
SDQ820:	61.	61.	60.	58.	61.	61.	61.	60.	61.	61.	61.	61.
SDQ821:	62.	62.	61.	58.	63.	63.	63.	62.	62.	62.	62.	62.
SDQ822:	60.	60.	59.	58.	61.	61.	61.	59.	60.	60.	60.	60.
SDQ824:	60.	60.	59.	58.	61.	61.	61.	59.	60.	60.	60.	60.
SDQ844A:	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SDQ845A:	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SDQ846A:	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SDQ847:	61.	61.	60.	56.	61.	61.	61.	59.	61.	61.	61.	61.
SDQ848:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ849:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ851:	63.	63.	62.	59.	64.	64.	64.	61.	63.	63.	63.	63.
SDQ852:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ854:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ857:	62.	62.	62.	58.	62.	62.	62.	60.	62.	62.	62.	62.
SDQ85:	58.	58.	58.	59.	59.	59.	59.	57.	58.	58.	58.	58.
SDQ812:	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SDQ812H:	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SDQ818A:	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SDQ823:	61.	61.	60.	57.	62.	62.	62.	62.	61.	61.	61.	61.
SDQ850:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ853:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ856:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ858:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ859:	63.	63.	62.	59.	64.	64.	64.	61.	63.	63.	63.	63.
SDQ860:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
H.S.GPA	60.	60.	59.	58.	62.	62.	62.	60.	60.	60.	60.	60.
SAT-V	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SAT-M	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
TSWE SCORE	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
AGE	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SEX	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
RACE	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
ONSET	61.	61.	60.	57.	63.	63.	63.	60.	61.	61.	61.	61.
HEARING (0-1)	46.	46.	46.	44.	48.	48.	48.	45.	46.	46.	46.	46.
H.S.GPA-SCHOOL	60.	60.	59.	57.	62.	62.	62.	59.	60.	60.	60.	60.
CUM.GPA	53.	53.	52.	49.	55.	55.	55.	52.	53.	53.	53.	53.
F.Y.GPA*	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.

TABLE B-3 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR SCHOOL C

MATRIX OF ORIGINAL N'S:

	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-M	TSWE SCORE	AGE	SEX	RACE	ONSET	HEAR.(0-1)	H.S.GPA-SCHOOL
SDQ#4:	62.	61.	62.	63.	63.	63.	63.	63.	63.	61.	46.	60.
SDQ#20:	61.	61.	59.	61.	61.	61.	61.	61.	61.	59.	45.	59.
SDQ#21:	62.	62.	61.	63.	63.	63.	63.	63.	63.	61.	46.	60.
SDQ#22:	61.	60.	59.	61.	61.	61.	61.	61.	61.	59.	45.	59.
SDQ#24:	61.	60.	60.	61.	61.	61.	61.	61.	61.	59.	45.	59.
SDQ#44A:	64.	63.	62.	65.	65.	65.	65.	65.	65.	63.	48.	62.
SDQ#45A:	64.	63.	62.	65.	65.	65.	65.	65.	65.	63.	48.	62.
SDQ#46A:	64.	63.	62.	65.	65.	65.	65.	65.	65.	63.	48.	62.
SDQ#47:	61.	61.	58.	61.	61.	61.	61.	61.	61.	60.	45.	58.
SDQ#48:	63.	63.	60.	63.	63.	63.	63.	63.	63.	61.	46.	60.
SDQ#49:	63.	63.	60.	63.	63.	63.	63.	63.	63.	61.	46.	60.
SDQ#51:	64.	63.	61.	64.	64.	64.	64.	64.	64.	62.	47.	61.
SDQ#52:	63.	63.	60.	63.	63.	63.	63.	63.	63.	61.	46.	60.
SDQ#54:	63.	63.	60.	63.	63.	63.	63.	63.	63.	61.	46.	60.
SDQ#57:	62.	62.	59.	62.	62.	62.	62.	62.	62.	60.	46.	59.
SDQ#5:	59.	58.	58.	59.	59.	59.	59.	59.	59.	57.	44.	57.
SDQ#12:	64.	63.	62.	65.	65.	65.	65.	65.	65.	63.	48.	62.
SDQ#12H:	64.	63.	62.	65.	65.	65.	65.	65.	65.	63.	48.	62.
SDQ#18A:	64.	63.	62.	65.	65.	65.	65.	65.	65.	63.	48.	62.
SDQ#23:	61.	61.	60.	62.	62.	62.	62.	62.	62.	60.	45.	59.
SDQ#50:	63.	63.	60.	63.	63.	63.	63.	63.	63.	61.	46.	60.
SDQ#53:	63.	63.	60.	63.	63.	63.	63.	63.	63.	61.	46.	60.
SDQ#56:	63.	63.	60.	63.	63.	63.	63.	63.	63.	61.	46.	60.
SDQ#58:	63.	63.	60.	63.	63.	63.	63.	63.	63.	61.	46.	60.
SDQ#59:	64.	63.	61.	64.	64.	64.	64.	64.	64.	62.	47.	61.
SDQ#60:	63.	63.	60.	63.	63.	63.	63.	63.	63.	61.	46.	60.
H.S.GPA	61.	60.	62.	62.	62.	62.	62.	62.	62.	60.	45.	59.
SAT-V	64.	63.	62.	150.	150.	68.	68.	150.	137.	140.	70.	136.
SAT-M	64.	63.	62.	150.	150.	68.	68.	150.	137.	140.	70.	136.
TSWE SCORE	64.	63.	62.	68.	68.	68.	68.	68.	68.	66.	51.	65.
AGE	64.	63.	62.	68.	68.	68.	68.	68.	68.	66.	51.	65.
SEX	64.	63.	62.	150.	150.	68.	68.	150.	137.	140.	70.	136.
RACE	64.	63.	62.	137.	137.	68.	68.	137.	137.	127.	69.	125.
ONSET	62.	61.	60.	140.	140.	66.	66.	140.	127.	140.	70.	127.
HEARING (0-1)	47.	46.	45.	70.	70.	51.	51.	70.	69.	70.	70.	68.
H.S.GPA-SCHOOL	61.	60.	59.	136.	136.	65.	65.	136.	125.	127.	68.	136.
CUM.GPA	54.	53.	52.	80.	80.	58.	58.	80.	79.	76.	70.	77.
F.Y.GPA*	64.	63.	62.	150.	150.	68.	68.	150.	137.	140.	70.	136.

TABLE B-3 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND
STANDARD DEVIATIONS FROM DIAGONAL OF
RECONSTRUCTED MATRIX FOR SCHOOL C

MATRIX OF ORIGINAL N'S:

	CUM.GPA	F.Y.GPA*
SDQ#4:	53.	63.
SDQ#20:	51.	61.
SDQ#21:	53.	63.
SDQ#22:	51.	61.
SDQ#24:	51.	61.
SDQ#44A:	55.	65.
SDQ#45A:	55.	65.
SDQ#46A:	55.	65.
SDQ#47:	51.	61.
SDQ#48:	53.	63.
SDQ#49:	53.	63.
SDQ#51:	54.	64.
SDQ#52:	53.	63.
SDQ#54:	53.	63.
SDQ#57:	52.	62.
SDQ#5:	49.	59.
SDQ#12:	55.	65.
SDQ#12H:	55.	65.
SDQ#18A:	55.	65.
SDQ#23:	52.	62.
SDQ#50:	53.	63.
SDQ#53:	53.	63.
SDQ#56:	53.	63.
SDQ#58:	53.	63.
SDQ#59:	54.	64.
SDQ#60:	53.	63.
H.S.GPA	52.	62.
SAT-V	80.	150.
SAT-M	80.	150.
TSWE SCORE	58.	68.
AGE	58.	68.
SEX	80.	150.
RACE	79.	137.
ONSET	76.	140.
HEARING (0-1)	70.	70.
H.S.GPA-SCHOOL	77.	136.
CUM.GPA	80.	80.
F.Y.GPA*	80.	150.

TABLE B-3 (CONCLUDED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND
STANDARD DEVIATIONS FROM DIAGONAL OF
RECONSTRUCTED MATRIX FOR SCHOOL C

VALUES FROM DIAGONAL OF RECONSTRUCTED MATRIX AFTER SUBSTITUTING MEANS, SIGMAS AND COVARIANCES OF EXISTING DATA FOR MISSING DATA:

THE NUMBER OF OBSERVATIONS IS 150.

VARIABLE	SUMS	SUMS OF SQUARES	MEAN	SIGMA(N)	SIGMA(N-1)
SDQ#4:	454.7619	1666.9571	3.0317	1.3862	1.3908
SDQ#20:	356.5574	1126.5020	2.3770	1.3637	1.3683
SDQ#21:	445.2381	1662.6852	2.9683	1.5080	1.5130
SDQ#22:	361.4754	1051.7692	2.4098	1.0975	1.1012
SDQ#24:	631.9672	2911.4537	4.2131	1.2882	1.2925
SDQ#44A:	320.7692	1174.2858	2.1385	1.8043	1.8104
SDQ#45A:	339.2308	1103.7229	2.2615	1.4979	1.5029
SDQ#46A:	293.0769	867.9767	1.9538	1.4032	1.4079
SDQ#47:	378.6885	1122.9459	2.5246	1.0549	1.0584
SDQ#48:	395.2381	1244.7415	2.6349	1.1642	1.1681
SDQ#49:	485.7143	1792.5126	3.2381	1.2103	1.2144
SDQ#51:	513.2812	1954.1271	3.4219	1.1482	1.1520
SDQ#52:	423.8095	1382.6692	2.8254	1.1113	1.1150
SDQ#54:	307.1429	823.2295	2.0476	1.1382	1.1420
SDQ#57:	321.7742	845.8369	2.1452	1.0184	1.0218
SDQ#5:	648.3051	3061.1573	4.3220	1.3144	1.3188
SDQ#12:	226.1538	686.1060	1.5077	1.5169	1.5220
SDQ#12H:	13.8462	27.9262	0.0923	0.4215	0.4229
SDQ#18A:	62.3077	113.8490	0.4154	0.7658	0.7684
SDQ#23:	321.7742	943.5418	2.1452	1.2994	1.3038
SDQ#50:	373.8095	1065.5274	2.4921	0.9451	0.9482
SDQ#53:	464.2857	1632.7661	3.0952	1.1422	1.1460
SDQ#56:	454.7619	1556.4087	3.0317	1.0884	1.0920
SDQ#58:	388.0952	1180.2034	2.5873	1.0835	1.0871
SDQ#59:	372.6562	1086.6063	2.4844	1.0353	1.0388
SDQ#60:	414.2857	1339.9089	2.7619	1.1422	1.1460
H.S.GPA	455.4677	1424.1255	3.0365	0.5236	0.5253
SAT-V	49560.0000	18280400.0000	330.4000	112.7170	113.0950
SAT-M	62060.0000	27318000.0000	413.7330	104.6170	104.9680
TSWE SCORE	4625.7353	160598.9443	30.8382	10.9391	10.9757
AGE	2863.2353	57970.9615	19.0882	4.7024	4.7181
SEX	238.0000	414.0000	1.5867	0.4924	0.4941
RACE	131.3869	131.3973	0.8759	0.3298	0.3309
ONSET	178.8214	1528.7557	1.1921	2.9615	2.9714
HEARING (0-1)	347.1429	861.8772	2.3143	0.6244	0.6265
H.S.GPA-SCHOOL	473.4485	1518.8764	3.1563	0.4043	0.4057
CUM.GPA	337.6875	807.4459	2.2512	0.5611	0.5630
F.Y.GPA*	364.2599	936.3739	2.4284	0.5877	0.5896

Appendix C

Supplementary Tables for Chapter V

TABLE C-1

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR CONTROL SAMPLE OF SCORE-REPORTERS FROM SCHOOL C

MATRIX OF ORIGINAL N'S:

	SDQ#4:	SDQ#20:	SDQ#21:	SDQ#22:	SDQ#24:	SDQ#44A:	SDQ#45A:	SDQ#46A:	SDQ#47:	SDQ#48:	SDQ#49:	SDQ#51:
SDQ#4:	3733.	3681.	3687.	3705.	3689.	3733.	3733.	3733.	3669.	3672.	3672.	3666.
SDQ#20:	3681.	3752.	3724.	3737.	3715.	3752.	3752.	3752.	3696.	3695.	3697.	3686.
SDQ#21:	3687.	3724.	3762.	3742.	3723.	3762.	3762.	3762.	3701.	3702.	3706.	3693.
SDQ#22:	3705.	3737.	3742.	3776.	3738.	3776.	3776.	3776.	3717.	3717.	3720.	3709.
SDQ#24:	3689.	3715.	3723.	3738.	3763.	3763.	3763.	3763.	3703.	3703.	3707.	3696.
SDQ#44A:	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SDQ#45A:	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SDQ#46A:	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SDQ#47:	3669.	3696.	3701.	3717.	3703.	3741.	3741.	3741.	3741.	3734.	3732.	3718.
SDQ#48:	3672.	3695.	3702.	3717.	3703.	3743.	3743.	3743.	3734.	3743.	3734.	3721.
SDQ#49:	3672.	3697.	3706.	3720.	3707.	3746.	3746.	3746.	3732.	3734.	3746.	3724.
SDQ#51:	3666.	3686.	3693.	3709.	3696.	3734.	3734.	3734.	3718.	3721.	3724.	3734.
SDQ#52:	3673.	3697.	3704.	3719.	3705.	3744.	3744.	3744.	3732.	3735.	3736.	3726.
SDQ#54:	3666.	3692.	3698.	3713.	3699.	3738.	3738.	3738.	3728.	3730.	3729.	3719.
SDQ#57:	3657.	3683.	3688.	3705.	3691.	3729.	3729.	3729.	3720.	3722.	3720.	3708.
SDQ#5:	3572.	3568.	3572.	3586.	3581.	3611.	3611.	3611.	3563.	3564.	3565.	3556.
SDQ#12:	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SDQ#12H:	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SDQ#18A:	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SDQ#23:	3696.	3731.	3732.	3755.	3731.	3767.	3767.	3767.	3712.	3710.	3715.	3704.
SDQ#50:	3674.	3698.	3704.	3719.	3705.	3746.	3746.	3746.	3733.	3737.	3737.	3724.
SDQ#53:	3674.	3700.	3707.	3721.	3707.	3746.	3746.	3746.	3733.	3735.	3736.	3727.
SDQ#56:	3641.	3666.	3672.	3687.	3674.	3712.	3712.	3712.	3701.	3703.	3703.	3693.
SDQ#58:	3646.	3671.	3676.	3693.	3680.	3717.	3717.	3717.	3706.	3709.	3706.	3696.
SDQ#59:	3667.	3693.	3698.	3715.	3700.	3739.	3739.	3739.	3729.	3731.	3730.	3718.
SDQ#60:	3667.	3692.	3697.	3714.	3701.	3739.	3739.	3739.	3727.	3729.	3728.	3718.
H.S.GPA	3703.	3716.	3723.	3736.	3724.	3765.	3765.	3765.	3704.	3707.	3707.	3700.
SAT-V	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SAT-M	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
TSWE SCORE	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
AGE	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SEX	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
F.Y.GPA*	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.

TABLE C-1 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR CONTROL SAMPLE OF SCORE-REPORTERS FROM SCHOOL C

MATRIX OF ORIGINAL N'S:

	SDQ#52:	SDQ#54:	SDQ#57:	SDQ#5:	SDQ#12:	SDQ#12H:	SDQ#18A:	SDQ#23:	SDQ#50:	SDQ#53:	SDQ#56:	SDQ#58:
SDQ#4:	3673.	3666.	3657.	3572.	3733.	3733.	3733.	3696.	3674.	3674.	3641.	3646.
SDQ#20:	3697.	3692.	3683.	3568.	3752.	3752.	3752.	3731.	3698.	3700.	3666.	3671.
SDQ#21:	3704.	3698.	3688.	3572.	3762.	3762.	3762.	3732.	3704.	3707.	3672.	3676.
SDQ#22:	3719.	3713.	3705.	3586.	3776.	3776.	3776.	3755.	3719.	3721.	3687.	3693.
SDQ#24:	3705.	3699.	3691.	3581.	3763.	3763.	3763.	3731.	3705.	3707.	3674.	3680.
SDQ#44A:	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SDQ#45A:	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SDQ#46A:	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SDQ#47:	3732.	3728.	3720.	3563.	3741.	3741.	3741.	3712.	3733.	3733.	3701.	3706.
SDQ#48:	3735.	3730.	3722.	3564.	3743.	3743.	3743.	3710.	3737.	3735.	3703.	3709.
SDQ#49:	3736.	3729.	3720.	3565.	3746.	3746.	3746.	3715.	3737.	3736.	3703.	3706.
SDQ#51:	3726.	3719.	3708.	3556.	3734.	3734.	3734.	3704.	3724.	3727.	3693.	3696.
SDQ#52:	3744.	3733.	3722.	3567.	3744.	3744.	3744.	3712.	3737.	3739.	3705.	3708.
SDQ#54:	3733.	3738.	3718.	3559.	3738.	3738.	3738.	3707.	3732.	3735.	3704.	3705.
SDQ#57:	3722.	3718.	3729.	3550.	3729.	3729.	3729.	3700.	3722.	3722.	3693.	3710.
SDQ#5:	3567.	3559.	3550.	3611.	3611.	3611.	3611.	3581.	3565.	3568.	3535.	3539.
SDQ#12:	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SDQ#12H:	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SDQ#18A:	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SDQ#23:	3712.	3707.	3700.	3581.	3767.	3767.	3767.	3767.	3714.	3715.	3682.	3688.
SDQ#50:	3737.	3732.	3722.	3565.	3746.	3746.	3746.	3714.	3746.	3737.	3704.	3710.
SDQ#53:	3739.	3735.	3722.	3568.	3746.	3746.	3746.	3715.	3737.	3746.	3707.	3709.
SDQ#56:	3705.	3704.	3693.	3535.	3712.	3712.	3712.	3682.	3704.	3707.	3712.	3679.
SDQ#58:	3708.	3705.	3710.	3539.	3717.	3717.	3717.	3688.	3710.	3709.	3679.	3717.
SDQ#59:	3732.	3728.	3719.	3560.	3739.	3739.	3739.	3709.	3731.	3733.	3700.	3707.
SDQ#60:	3730.	3724.	3716.	3560.	3739.	3739.	3739.	3709.	3730.	3731.	3697.	3705.
H.S.GPA	3709.	3702.	3692.	3589.	3765.	3765.	3765.	3730.	3710.	3709.	3674.	3680.
SAT-V	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SAT-M	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
TSHE SCORE	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
AGE	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SEX	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
F.Y.GPA*	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.

TABLE C-1 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR CONTROL SAMPLE OF SCORE-REPORTERS FROM SCHOOL C

MATRIX OF ORIGINAL N'S:

	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-Q	TSWE SCO	AGE	SEX	F.Y.GPA#
SDQ#4:	3667.	3667.	3703.	3733.	3733.	3733.	3733.	3733.	3733.
SDQ#20:	3693.	3692.	3716.	3752.	3752.	3752.	3752.	3752.	3752.
SDQ#21:	3698.	3697.	3723.	3762.	3762.	3762.	3762.	3762.	3762.
SDQ#22:	3715.	3714.	3736.	3776.	3776.	3776.	3776.	3776.	3776.
SDQ#24:	3700.	3701.	3724.	3763.	3763.	3763.	3763.	3763.	3763.
SDQ#44A:	3739.	3739.	3765.	3815.	3815.	3815.	3815.	3815.	3815.
SDQ#45A:	3739.	3739.	3765.	3815.	3815.	3815.	3815.	3815.	3815.
SDQ#46A:	3739.	3739.	3765.	3815.	3815.	3815.	3815.	3815.	3815.
SDQ#47:	3729.	3727.	3704.	3741.	3741.	3741.	3741.	3741.	3741.
SDQ#48:	3731.	3729.	3707.	3743.	3743.	3743.	3743.	3743.	3743.
SDQ#49:	3730.	3728.	3707.	3746.	3746.	3746.	3746.	3746.	3746.
SDQ#51:	3718.	3718.	3700.	3734.	3734.	3734.	3734.	3734.	3734.
SDQ#52:	3732.	3730.	3709.	3744.	3744.	3744.	3744.	3744.	3744.
SDQ#54:	3728.	3724.	3702.	3738.	3738.	3738.	3738.	3738.	3738.
SDQ#57:	3719.	3716.	3692.	3729.	3729.	3729.	3729.	3729.	3729.
SDQ#5:	3560.	3560.	3589.	3611.	3611.	3611.	3611.	3611.	3611.
SDQ#12:	3739.	3739.	3765.	3815.	3815.	3815.	3815.	3815.	3815.
SDQ#12H:	3739.	3739.	3765.	3815.	3815.	3815.	3815.	3815.	3815.
SDQ#18A:	3739.	3739.	3765.	3815.	3815.	3815.	3815.	3815.	3815.
SDQ#23:	3709.	3709.	3730.	3767.	3767.	3767.	3767.	3767.	3767.
SDQ#50:	3731.	3730.	3710.	3746.	3746.	3746.	3746.	3746.	3746.
SDQ#53:	3733.	3731.	3709.	3746.	3746.	3746.	3746.	3746.	3746.
SDQ#56:	3700.	3697.	3674.	3712.	3712.	3712.	3712.	3712.	3712.
SDQ#58:	3707.	3705.	3680.	3717.	3717.	3717.	3717.	3717.	3717.
SDQ#59:	3739.	3729.	3702.	3739.	3739.	3739.	3739.	3739.	3739.
SDQ#60:	3729.	3739.	3703.	3739.	3739.	3739.	3739.	3739.	3739.
H.S.GPA	3702.	3703.	3765.	3765.	3765.	3765.	3765.	3765.	3765.
SAT-V	3739.	3739.	3765.	4060.	4060.	4060.	4060.	4060.	4060.
SAT-M	3739.	3739.	3765.	4060.	4060.	4060.	4060.	4060.	4060.
TSWE SCORE	3739.	3739.	3765.	4060.	4060.	4060.	4060.	4060.	4060.
AGE	3739.	3739.	3765.	4060.	4060.	4060.	4060.	4060.	4060.
SEX	3739.	3739.	3765.	4060.	4060.	4060.	4060.	4060.	4060.
F.Y.GPA#	3739.	3739.	3765.	4060.	4060.	4060.	4060.	4060.	4060.

TABLE C-1 (CONCLUDED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR CONTROL SAMPLE OF SCORE-REPORTERS FROM SCHOOL C

VALUES FROM DIAGONAL OF RECONSTRUCTED MATRIX AFTER SUBSTITUTING MEANS, SIGMAS AND COVARIANCES OF EXISTING DATA FOR MISSING DATA:

THE NUMBER OF OBSERVATIONS IS 4060.

VARIABLE	SUMS	SUMS OF SQUARES	MEAN	SIGMA(N)	SIGMA(N-1)
SDQ84:	15970.2759	69175.6635	3.9336	1.2512	1.2513
SDQ820:	10613.1343	35769.7146	2.6141	1.4060	1.4062
SDQ821:	9796.0181	29958.0022	2.4128	1.2479	1.2480
SDQ822:	8702.7648	21586.0077	2.1435	0.8497	0.8498
SDQ824:	16899.2240	80297.1322	4.1624	1.5660	1.5662
SDQ844A:	7648.5505	25010.4063	1.8839	1.6159	1.6161
SDQ845A:	9194.8624	30009.0261	2.2647	1.5041	1.5043
SDQ846A:	8598.8991	27697.5446	2.1180	1.5285	1.5287
SDQ847:	10313.3333	30349.6996	2.5402	1.0112	1.0113
SDQ848:	10520.4221	31791.3155	2.5912	1.0563	1.0565
SDQ849:	12191.9221	40950.1643	3.0029	1.0337	1.0339
SDQ851:	15703.9582	64245.7154	3.8680	0.9289	0.9290
SDQ852:	13285.0053	47899.2800	3.2722	1.0444	1.0445
SDQ854:	10224.9438	30431.6349	2.5185	1.0737	1.0738
SDQ857:	11858.8147	39245.6787	2.9209	1.0653	1.0654
SDQ85:	17782.5976	81903.9613	4.3800	0.9947	0.9948
SDQ812:	7660.2569	23911.0487	1.8868	1.5263	1.5265
SDQ812H:	2355.1193	6650.3955	0.5801	1.1408	1.1410
SDQ818A:	3251.1927	7014.3450	0.8008	1.0423	1.0424
SDQ823:	7416.2092	17633.6488	1.8267	1.0033	1.0034
SDQ850:	12246.1132	40748.5624	3.0163	0.9688	0.9689
SDQ853:	12077.0368	40002.8979	2.9746	1.0022	1.0023
SDQ856:	13668.5937	49898.0584	3.3666	0.9777	0.9778
SDQ858:	10939.1714	33287.2807	2.6944	0.9691	0.9692
SDQ859:	12694.6938	43734.9397	3.1268	0.9977	0.9978
SDQ860:	13063.8834	45884.9223	3.2177	0.9737	0.9738
H.S.GPA	12786.7231	41146.3292	3.1494	0.4643	0.4644
SAT-V	1707720.0000	757686200.0000	420.6210	98.4910	98.5030
SAT-M	1911800.0000	942066800.0000	470.8870	101.4980	101.5110
TSWE SCORE	174007.0000	7876333.0000	42.8589	10.1539	10.1551
AGE	74629.0000	1460287.0000	18.3815	4.6686	4.6692
SEX	6194.0000	10462.0000	1.5256	0.4993	0.4994
F.Y.GPA*	10110.7383	27069.7127	2.4903	0.6824	0.6825

TABLE C-2

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX OF DEAF SAMPLE (SCORE-REPORTERS ONLY) FROM SCHOOL C USED FOR MODEL COMPARISONS

MATRIX OF ORIGINAL N'S:

	SDQ#4:	SDQ#20:	SDQ#21:	SDQ#22:	SDQ#24:	SDQ#44A:	SDQ#45A:	SDQ#46A:	SDQ#47:	SDQ#48:	SDQ#49:	SDQ#51:
SDQ#4:	63.	60.	62.	60.	60.	63.	63.	63.	59.	61.	61.	62.
SDQ#20:	60.	61.	61.	60.	60.	61.	61.	61.	59.	61.	61.	61.
SDQ#21:	62.	61.	63.	60.	60.	63.	63.	63.	60.	62.	62.	62.
SDQ#22:	60.	60.	60.	61.	60.	61.	61.	61.	58.	60.	60.	61.
SDQ#24:	60.	60.	60.	60.	61.	61.	61.	61.	58.	60.	60.	61.
SDQ#44A:	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SDQ#45A:	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SDQ#46A:	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SDQ#47:	59.	59.	60.	58.	58.	61.	61.	61.	61.	61.	61.	61.
SDQ#48:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#49:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#51:	62.	61.	62.	61.	61.	64.	64.	64.	61.	63.	63.	64.
SDQ#52:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#54:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#57:	60.	60.	61.	59.	59.	62.	62.	62.	60.	62.	62.	62.
SDQ#5:	59.	58.	58.	58.	58.	59.	59.	59.	56.	58.	58.	59.
SDQ#12:	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SDQ#12H:	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SDQ#18A:	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SDQ#23:	61.	60.	62.	59.	59.	62.	62.	62.	59.	61.	61.	61.
SDQ#50:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#53:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#56:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#58:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
SDQ#59:	62.	61.	62.	61.	61.	64.	64.	64.	61.	63.	63.	64.
SDQ#60:	61.	61.	62.	60.	60.	63.	63.	63.	61.	63.	63.	63.
H.S.GPA	62.	59.	61.	59.	60.	62.	62.	62.	58.	60.	60.	61.
SAT-V	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SAT-M	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
TSWE SCORE	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
AGE	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
SEX	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.
F.Y.GPA*	63.	61.	63.	61.	61.	65.	65.	65.	61.	63.	63.	64.

TABLE C-2 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX OF DEAF SAMPLE (SCORE-REPORTERS ONLY) FROM SCHOOL C USED FOR MODEL COMPARISONS

MATRIX OF ORIGINAL N'S:

	SDQ#52:	SDQ#54:	SDQ#57:	SDQ#5:	SDQ#12:	SDQ#12H:	SDQ#18A:	SDQ#23:	SDQ#50:	SDQ#53:	SDQ#56:	SDQ#58:
SDQ#4:	61.	61.	60.	59.	63.	63.	63.	61.	61.	61.	61.	61.
SDQ#20:	61.	61.	60.	58.	61.	61.	61.	60.	61.	61.	61.	61.
SDQ#21:	62.	62.	61.	58.	63.	63.	63.	62.	62.	62.	62.	62.
SDQ#22:	60.	60.	59.	58.	61.	61.	61.	59.	60.	60.	60.	60.
SDQ#24:	60.	60.	59.	58.	61.	61.	61.	59.	60.	60.	60.	60.
SDQ#44A:	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SDQ#45A:	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SDQ#46A:	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SDQ#47:	61.	61.	60.	56.	61.	61.	61.	59.	61.	61.	61.	61.
SDQ#48:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ#49:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ#51:	63.	63.	62.	59.	64.	64.	64.	61.	63.	63.	63.	63.
SDQ#52:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ#54:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ#57:	62.	62.	62.	58.	62.	62.	62.	60.	62.	62.	62.	62.
SDQ#5:	58.	58.	58.	59.	59.	59.	59.	57.	58.	58.	58.	58.
SDQ#12:	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SDQ#12H:	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SDQ#18A:	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SDQ#23:	61.	61.	60.	57.	62.	62.	62.	62.	61.	61.	61.	61.
SDQ#50:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ#53:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ#56:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ#58:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
SDQ#59:	63.	63.	62.	59.	64.	64.	64.	61.	63.	63.	63.	63.
SDQ#60:	63.	63.	62.	58.	63.	63.	63.	61.	63.	63.	63.	63.
H.S.GPA	60.	60.	59.	58.	62.	62.	62.	60.	60.	60.	60.	60.
SAT-V	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SAT-M	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
TSWE SCORE	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
AGE	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
SEX	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.
F.Y.GPA*	63.	63.	62.	59.	65.	65.	65.	62.	63.	63.	63.	63.

TABLE C-2 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX OF DEAF SAMPLE (SCORE-REPORTERS ONLY) FROM SCHOOL C USED FOR MODEL COMPARISONS

MATRIX OF ORIGINAL N'S:

	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-M	TSWE SCORE	AGE	SEX	F.Y.GPA*
SDQ#4:	62.	61.	62.	63.	63.	63.	63.	63.	63.
SDQ#20:	61.	61.	59.	61.	61.	61.	61.	61.	61.
SDQ#21:	62.	62.	61.	63.	63.	63.	63.	63.	63.
SDQ#22:	61.	60.	59.	61.	61.	61.	61.	61.	61.
SDQ#24:	61.	60.	60.	61.	61.	61.	61.	61.	61.
SDQ#44A:	64.	63.	62.	65.	65.	65.	65.	65.	65.
SDQ#45A:	64.	63.	62.	65.	65.	65.	65.	65.	65.
SDQ#46A:	64.	63.	62.	65.	65.	65.	65.	65.	65.
SDQ#47:	61.	61.	58.	61.	61.	61.	61.	61.	61.
SDQ#48:	63.	63.	60.	63.	63.	63.	63.	63.	63.
SDQ#49:	63.	63.	60.	63.	63.	63.	63.	63.	63.
SDQ#51:	64.	63.	61.	64.	64.	64.	64.	64.	64.
SDQ#52:	63.	63.	60.	63.	63.	63.	63.	63.	63.
SDQ#54:	63.	63.	60.	63.	63.	63.	63.	63.	63.
SDQ#57:	62.	62.	59.	62.	62.	62.	62.	62.	62.
SDQ#5:	59.	58.	58.	59.	59.	59.	59.	59.	59.
SDQ#12:	64.	63.	62.	65.	65.	65.	65.	65.	65.
SDQ#12H:	64.	63.	62.	65.	65.	65.	65.	65.	65.
SDQ#18A:	64.	63.	62.	65.	65.	65.	65.	65.	65.
SDQ#23:	61.	61.	60.	62.	62.	62.	62.	62.	62.
SDQ#50:	63.	63.	60.	63.	63.	63.	63.	63.	63.
SDQ#53:	63.	63.	60.	63.	63.	63.	63.	63.	63.
SDQ#56:	63.	63.	60.	63.	63.	63.	63.	63.	63.
SDQ#58:	63.	63.	60.	63.	63.	63.	63.	63.	63.
SDQ#59:	64.	63.	61.	64.	64.	64.	64.	64.	64.
SDQ#60:	63.	63.	60.	63.	63.	63.	63.	63.	63.
H.S.GPA	61.	60.	62.	62.	62.	62.	62.	62.	62.
SAT-V	64.	63.	62.	68.	68.	68.	68.	68.	68.
SAT-M	64.	63.	62.	68.	68.	68.	68.	68.	68.
TSWE SCORE	64.	63.	62.	68.	68.	68.	68.	68.	68.
AGE	64.	63.	62.	68.	68.	68.	68.	68.	68.
SEX	64.	63.	62.	68.	68.	68.	68.	68.	68.
F.Y.GPA*	64.	63.	62.	68.	68.	68.	68.	68.	68.

TABLE C-2 (CONCLUDED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX OF DEAF SAMPLE (SCORE-REPORTERS ONLY) FROM SCHOOL C USED FOR MODEL COMPARISONS

VALUES FROM DIAGONAL OF RECONSTRUCTED MATRIX AFTER SUBSTITUTING MEANS, SIGMAS AND COVARIANCES OF EXISTING DATA FOR MISSING DATA:

THE NUMBER OF OBSERVATIONS IS 68.

VARIABLE	SUMS	SUMS OF SQUARES	MEAN	SIGMA(N)	SIGMA(N-1)
SDQ#4:	206.1587	754.6297	3.0317	1.3806	1.3908
SDQ#20:	161.6393	509.6575	2.3770	1.3582	1.3683
SDQ#21:	201.8413	752.4992	2.9683	1.5019	1.5130
SDQ#22:	163.8689	476.1391	2.4098	1.0930	1.1012
SDQ#24:	286.4918	1318.9458	4.2131	1.2829	1.2925
SDQ#44A:	145.4154	530.5513	2.1385	1.7970	1.8104
SDQ#45A:	153.7846	499.1196	2.2615	1.4918	1.5029
SDQ#46A:	132.8615	392.3992	1.9538	1.3975	1.4079
SDQ#47:	171.6721	508.4564	2.5246	1.0506	1.0584
SDQ#48:	179.1746	563.5369	2.6349	1.1595	1.1681
SDQ#49:	220.1905	811.7996	3.2381	1.2054	1.2144
SDQ#51:	232.6875	885.1454	3.4219	1.1435	1.1520
SDQ#52:	192.1270	626.1304	2.8254	1.1068	1.1150
SDQ#54:	139.2381	372.4845	2.0476	1.1336	1.1420
SDQ#57:	145.8710	382.8752	2.1452	1.0143	1.0218
SDQ#5:	293.8983	1386.7738	4.3220	1.3091	1.3188
SDQ#12:	102.5231	309.7684	1.5077	1.5107	1.5220
SDQ#12H:	6.2769	12.5621	0.0923	0.4198	0.4229
SDQ#18A:	28.2462	51.2888	0.4154	0.7627	0.7684
SDQ#23:	145.8710	426.8097	2.1452	1.2942	1.3038
SDQ#50:	169.4603	482.5475	2.4921	0.9412	0.9482
SDQ#53:	210.4762	739.4693	3.0952	1.1376	1.1460
SDQ#56:	206.1587	704.9200	3.0317	1.0840	1.0920
SDQ#58:	175.9365	534.3795	2.5873	1.0791	1.0871
SDQ#59:	168.9375	492.0049	2.4844	1.0311	1.0388
SDQ#60:	187.8095	606.7074	2.7619	1.1376	1.1460
H.S.GPA	206.4787	645.4527	3.0365	0.5215	0.5253
SAT-V	21990.0000	7968700.0000	323.3820	112.2970	113.1320
SAT-M	27630.0000	12053100.0000	406.3240	110.2390	111.0590
TSWE SCORE	2097.0000	72739.0000	30.8382	10.8947	10.9757
AGE	1298.0000	26268.0000	19.0882	4.6833	4.7181
SEX	109.0000	191.0000	1.6029	0.4893	0.4929
F.Y.GPA*	159.5800	398.4521	2.3468	0.5935	0.5980

TABLE C-3

INTERCORRELATIONS OF VARIABLES FROM DEAF SAMPLE
FROM SCHOOL C (SCORE-REPORTERS ONLY)
C USED FOR MODEL COMPARISONS
N=68

	SDQ#4:	SDQ#20:	SDQ#21:	SDQ#22:	SDQ#24:	SDQ#44A:	SDQ#45A:	SDQ#46A:	SDQ#47:	SDQ#48:	SDQ#49:	SDQ#51:
SDQ#4:	1.0000	0.0438	-0.1235	-0.1486	0.1116	0.0425	-0.1496	0.1013	-0.1195	-0.0031	0.0052	-0.0294
SDQ#20:	0.0438	1.0000	0.0925	0.2637	0.0837	0.1713	0.3118	0.1548	0.0045	0.0751	0.0753	0.1722
SDQ#21:	-0.1235	0.0925	1.0000	0.0474	-0.0335	0.1070	0.1585	0.1541	-0.1543	-0.0433	0.5852	0.1573
SDQ#22:	-0.1486	0.2637	0.0474	1.0000	-0.0420	0.0764	0.4675	0.3075	-0.0207	-0.1229	-0.0863	0.1925
SDQ#24:	0.1116	0.0837	-0.0335	-0.0420	1.0000	-0.0124	0.0895	0.0973	0.0332	0.0956	-0.2240	-0.0302
SDQ#44A:	0.0425	0.1713	0.1070	0.0764	-0.0124	1.0000	0.2851	0.3765	-0.2431	0.1705	0.1183	-0.0202
SDQ#45A:	-0.1496	0.3118	0.1585	0.4675	0.0895	0.2851	1.0000	0.6039	-0.0877	-0.0463	0.0834	0.2324
SDQ#46A:	0.1013	0.1548	0.1541	0.3075	0.0973	0.3765	0.6039	1.0000	-0.1241	-0.0063	0.0744	0.2408
SDQ#47:	-0.1195	0.0045	-0.1543	-0.0207	0.0332	-0.2431	-0.0877	-0.1241	1.0000	-0.0131	0.0078	0.3834
SDQ#48:	-0.0031	0.0751	-0.0433	-0.1229	0.0956	0.1705	-0.0463	-0.0063	-0.0131	1.0000	-0.0401	0.0147
SDQ#49:	0.0052	0.0753	0.5852	-0.0863	-0.2240	0.1183	0.0834	0.0744	0.0078	-0.0401	1.0000	0.2934
SDQ#51:	-0.0294	0.1722	0.1573	0.1925	-0.0302	-0.0202	0.2324	0.2408	0.3834	0.0147	0.2934	1.0000
SDQ#52:	-0.1124	0.2320	0.1025	0.2584	-0.1255	-0.0152	0.1851	0.1689	0.3629	0.0617	0.1861	0.6923
SDQ#54:	0.1214	0.1081	0.1223	-0.1773	0.2740	0.1202	-0.0272	0.1117	0.0533	0.3881	0.1894	0.3284
SDQ#57:	0.0993	0.0977	0.0991	-0.0712	-0.1078	-0.1635	-0.0263	0.0718	0.1817	0.2487	0.1151	0.3047
SDQ#5:	-0.0253	0.0457	0.0063	0.3075	0.0688	-0.2707	0.0687	0.0967	0.0406	0.1107	0.0761	0.2206
SDQ#12:	0.1188	0.0750	0.0567	0.1546	0.1476	-0.2471	0.0094	0.0767	-0.0802	0.1789	-0.0343	-0.0764
SDQ#12H:	-0.1447	-0.1191	0.1040	0.0535	0.1208	0.0443	0.1827	0.0598	-0.1137	-0.1547	-0.1061	-0.1142
SDQ#18A:	0.1198	0.0186	0.2313	0.1803	0.0569	0.0366	0.1751	0.3358	0.0769	-0.1625	0.0269	-0.0605
SDQ#23:	-0.0894	0.1798	0.0591	0.3678	-0.0182	-0.0382	0.0530	0.0994	0.0033	0.0228	-0.0419	0.0571
SDQ#50:	-0.0612	0.1865	-0.0905	0.1283	0.2387	-0.2243	0.0862	0.1536	0.0942	0.1357	-0.1454	0.0330
SDQ#53:	0.1471	-0.0177	0.1555	-0.2048	0.0513	-0.0244	-0.0821	0.1006	-0.0101	0.0023	0.2732	0.1023
SDQ#56:	-0.0333	0.2868	0.3451	0.1000	-0.1715	0.0295	0.1017	0.2449	-0.0439	0.1862	0.3713	0.3363
SDQ#58:	0.0545	0.0976	0.0707	-0.0572	0.2496	-0.0168	0.0967	0.2186	0.1106	0.1081	0.1612	0.3047
SDQ#59:	-0.0116	0.2373	-0.0204	-0.0754	0.0172	-0.1129	0.1144	0.1365	0.2121	0.1627	-0.0175	0.2244
SDQ#60:	-0.1311	0.2930	-0.0236	0.1857	0.0342	-0.1875	0.0795	0.0532	0.2290	0.0786	0.0878	0.0941
H.S.GPA	0.1257	-0.0250	0.0063	0.1103	0.1263	-0.2802	-0.0558	0.0825	-0.0944	0.2802	0.0022	0.0065
SAT-V	0.1455	0.1759	-0.3031	0.0430	0.1749	-0.1586	0.0212	-0.0014	-0.1021	0.1153	-0.3231	-0.1843
SAT-M	0.2384	0.0955	-0.1344	-0.1481	0.2219	-0.0561	-0.1583	-0.0180	-0.3481	0.0222	-0.1226	-0.2538
TSWE SCORE	0.0970	0.0853	-0.2420	-0.0650	0.0936	-0.1641	0.0025	0.0195	-0.1083	-0.0439	-0.3201	-0.2237
AGE	0.0207	0.2543	0.1746	0.2817	0.0956	0.0105	0.1227	0.0653	-0.0434	-0.1749	-0.0052	-0.1484
SEX	0.0657	-0.0235	-0.2117	0.1681	-0.1279	-0.0420	0.0379	-0.0719	0.1781	-0.2641	-0.1020	0.0270
F.Y.GPA*	0.2597	0.1532	0.0456	-0.0777	0.0023	-0.0799	-0.0697	0.1787	-0.2956	0.1339	0.1710	0.0668

TABLE C-3 (CONTINUED)

INTERCORRELATIONS OF VARIABLES FROM DEAF SAMPLE
FROM SCHOOL C (SCORE-REPORTERS ONLY)
C USED FOR MODEL COMPARISONS
N=68

	SDQ#52:	SDQ#54:	SDQ#57:	SDQ#5:	SDQ#12:	SDQ#12H:	SDQ#18A:	SDQ#23:	SDQ#50:	SDQ#53:	SDQ#56:	SDQ#58:
SDQ#4:	-0.1124	0.1214	0.0993	-0.0253	0.1188	-0.1447	0.1198	-0.0894	-0.0612	0.1471	-0.0333	0.0545
SDQ#20:	0.2320	0.1081	0.0977	0.0457	0.0750	-0.1191	0.0186	0.1798	0.1865	-0.0177	0.2860	0.0976
SDQ#21:	0.1025	0.1223	0.0991	0.0063	0.0567	0.1040	0.2313	0.0591	-0.0905	0.1555	0.3451	0.0707
SDQ#22:	0.2584	-0.1773	-0.0712	0.3075	0.1546	0.0535	0.1803	0.3678	0.1283	-0.2048	0.1000	-0.0572
SDQ#24:	-0.1255	0.2740	-0.1078	0.0688	0.1476	0.1208	0.0569	-0.0182	0.2387	0.0513	-0.1715	0.2496
SDQ#44A:	-0.0152	0.1202	-0.1635	-0.2707	-0.2471	0.0443	0.0366	-0.0382	-0.2243	-0.0244	0.0295	-0.0168
SDQ#45A:	0.1851	-0.0272	-0.0263	0.0687	0.0094	0.1827	0.1751	0.0530	0.0862	-0.0821	0.1017	0.0967
SDQ#46A:	0.1689	0.1117	0.0718	0.0967	0.0767	0.0598	0.3358	0.0994	0.1536	0.1006	0.2449	0.2186
SDQ#47:	0.3629	0.0533	0.1817	0.0406	-0.0802	-0.1137	0.0769	0.0033	0.0942	-0.0101	-0.0439	0.1106
SDQ#48:	0.0617	0.3881	0.2487	0.1107	0.1789	-0.1547	-0.1625	0.0228	0.1357	0.0023	0.1862	0.1081
SDQ#49:	0.1861	0.1894	0.1151	0.0761	-0.0343	-0.1061	0.0269	-0.0419	-0.1454	0.2732	0.3713	0.1612
SDQ#51:	0.6923	0.3284	0.3047	0.2206	-0.0764	-0.1142	-0.0605	0.0571	0.0330	0.1023	0.3363	0.3047
SDQ#52:	1.0000	0.2473	0.3649	0.2353	0.0772	-0.2006	-0.0984	0.2294	0.1131	0.1268	0.3623	0.2989
SDQ#54:	0.2473	1.0000	0.0901	0.0261	0.0805	-0.1081	-0.0415	-0.1055	0.0525	0.3292	0.2704	0.4188
SDQ#57:	0.3649	0.0901	1.0000	0.1957	0.3455	-0.1435	-0.1194	0.1928	0.0993	0.1120	0.3900	0.0826
SDQ#5:	0.2353	0.0261	0.1957	1.0000	0.3512	-0.1105	-0.2530	0.3182	0.3958	0.1012	0.1347	0.0745
SDQ#12:	0.0772	0.0805	0.3455	0.3512	1.0000	-0.0011	0.1776	0.3296	0.2108	0.4026	0.3037	0.3138
SDQ#12H:	-0.2006	-0.1081	-0.1435	-0.1105	-0.0011	1.0000	0.1206	0.0909	-0.0774	0.0796	0.1311	0.0510
SDQ#18A:	-0.0984	-0.0415	-0.1194	-0.2530	0.1776	0.1206	1.0000	0.1783	-0.0719	0.2432	0.1358	0.2510
SDQ#23:	0.2294	-0.1055	0.1928	0.3182	0.3296	0.0909	0.1783	1.0000	0.1734	0.0987	0.2398	0.0914
SDQ#50:	0.1131	0.0525	0.0993	0.3958	0.2108	-0.0774	-0.0719	0.1734	1.0000	-0.1180	-0.0153	0.1063
SDQ#53:	0.1268	0.3292	0.1120	0.1012	0.4026	0.0796	0.2432	0.0987	-0.1180	1.0000	0.3971	0.4334
SDQ#56:	0.3623	0.2704	0.3900	0.1347	0.3037	0.1311	0.1358	0.2398	-0.0153	0.3971	1.0000	0.3645
SDQ#58:	0.2989	0.4188	0.0826	0.0745	0.3138	0.0510	0.2510	0.0914	0.1063	0.4334	0.3645	1.0000
SDQ#59:	0.2410	0.1422	0.1906	0.0621	0.2143	-0.0325	0.0380	-0.0556	0.5166	0.0680	0.0991	0.1958
SDQ#60:	0.1689	-0.0035	0.1414	0.3574	0.2691	-0.0843	0.1527	0.2458	0.6736	-0.0070	0.1866	0.1917
H.S.GPA	0.1506	0.1946	0.2893	0.4698	0.8776	-0.1691	-0.0776	0.2561	0.2725	0.4263	0.2443	0.2255
SAT-V	-0.1812	0.1028	0.0050	0.1414	0.2645	-0.0775	-0.0705	-0.0804	0.5214	-0.2298	-0.2264	0.0612
SAT-M	-0.1837	0.1696	-0.0890	0.2329	0.3502	-0.0179	-0.0352	-0.0811	0.1962	0.3886	-0.0816	0.2204
TSWE SCORE	-0.1596	-0.0224	0.0168	0.0880	0.2446	0.0507	-0.0565	-0.0956	0.4557	-0.1729	-0.2766	-0.0329
AGE	-0.0992	-0.1164	0.0997	0.0227	0.1936	-0.0516	-0.0477	0.0731	0.0176	-0.1084	-0.1273	-0.1868
SEX	0.0426	-0.3063	0.0528	0.0374	-0.0374	-0.0449	-0.0082	0.0892	-0.1099	-0.1567	-0.1540	-0.1713
F.Y.GPA*	-0.0078	0.2490	0.2461	0.1544	0.3205	-0.2468	-0.0400	-0.0180	-0.1388	0.1572	0.2663	0.2248

TABLE C-3 (CONCLUDED)

INTERCORRELATIONS OF VARIABLES FROM DEAF SAMPLE
FROM SCHOOL C (SCORE-REPORTERS ONLY)
C USED FOR MODEL COMPARISONS
N=68

	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-M	TSWE SCORE	AGE	SEX	F.Y.GPA*
SDQ#4:	-0.0116	-0.1311	0.1257	0.1455	0.2384	0.0970	0.0207	0.0657	0.2597
SDQ#20:	0.2373	0.2930	-0.0250	0.1759	0.0955	0.0853	0.2543	-0.0235	0.1532
SDQ#21:	-0.0204	-0.0236	0.0063	-0.3031	-0.1344	-0.2420	0.1746	-0.2117	0.0456
SDQ#22:	-0.0754	0.1857	0.1103	0.0430	-0.1481	-0.0650	0.2817	0.1681	-0.0777
SDQ#24:	0.0172	0.0342	0.1263	0.1749	0.2219	0.0936	0.0956	-0.1279	0.0023
SDQ#44A:	-0.1129	-0.1875	-0.2802	-0.1586	-0.0561	-0.1641	0.0105	-0.0420	-0.0799
SDQ#45A:	0.1144	0.0795	-0.0558	0.0212	-0.1583	0.0025	0.1227	0.0379	-0.0697
SDQ#46A:	0.1365	0.0532	0.0825	-0.0014	-0.0180	0.0195	0.0653	-0.0719	0.1787
SDQ#47:	0.2121	0.2290	-0.0944	-0.1021	-0.3481	-0.1083	-0.0434	0.1781	-0.2956
SDQ#48:	0.1627	0.0786	0.2802	0.1153	0.0222	-0.0439	-0.1749	-0.2641	0.1339
SDQ#49:	-0.0175	0.0878	0.0022	-0.3231	-0.1226	-0.3201	-0.0052	-0.1020	0.1710
SDQ#51:	0.2244	0.0941	0.0065	-0.1843	-0.2538	-0.2237	-0.1484	0.0270	0.0668
SDQ#52:	0.2410	0.1689	0.1506	-0.1812	-0.1837	-0.1596	-0.0992	0.0426	-0.0078
SDQ#54:	0.1422	-0.0035	0.1946	0.1028	0.1696	-0.0224	-0.1164	-0.3063	0.2490
SDQ#57:	0.1906	0.1414	0.2893	0.0050	-0.0890	0.0168	0.0997	0.0528	0.2461
SDQ#5:	0.0621	0.3574	0.4698	0.1414	0.2329	0.0880	0.0227	0.0374	0.1544
SDQ#12:	0.2143	0.2691	0.8776	0.2645	0.3502	0.2446	0.1936	-0.0374	0.3205
SDQ#12H:	-0.0325	-0.0843	-0.1691	-0.0775	-0.0179	0.0507	-0.0516	-0.0449	-0.2468
SDQ#18A:	0.0380	0.1527	-0.0776	-0.0705	-0.0352	-0.0565	-0.0477	-0.0082	-0.0400
SDQ#23:	-0.0556	0.2458	0.2561	-0.0804	-0.0811	-0.0956	0.0731	0.0892	-0.0180
SDQ#50:	0.5166	0.6736	0.2725	0.5214	0.1962	0.4557	0.0176	-0.1099	-0.1388
SDQ#53:	0.0680	-0.0070	0.4263	-0.2298	0.3886	-0.1729	-0.1084	-0.1567	0.1572
SDQ#56:	0.0991	0.1866	0.2443	-0.2264	-0.0816	-0.2766	-0.1273	-0.1540	0.2663
SDQ#58:	0.1958	0.1917	0.2255	0.0612	0.2204	-0.0329	-0.1868	-0.1713	0.2248
SDQ#59:	1.0000	0.5302	0.1610	0.2835	0.0007	0.2117	-0.0813	0.0183	-0.0074
SDQ#60:	0.5302	1.0000	0.2405	0.3595	0.0780	0.2574	0.1031	0.0797	-0.0007
H.S.GPA	0.1610	0.2405	1.0000	0.3231	0.3625	0.2462	0.1870	-0.1432	0.3989
SAT-V	0.2835	0.3595	0.3231	1.0000	0.4633	0.8219	0.0895	-0.0451	0.2841
SAT-M	0.0007	0.0780	0.3625	0.4633	1.0000	0.5054	0.0613	-0.2179	0.2928
TSWE SCORE	0.2117	0.2574	0.2462	0.8219	0.5054	1.0000	0.0951	0.0459	0.1541
AGE	-0.0813	0.1031	0.1870	0.0895	0.0613	0.0951	1.0000	-0.1452	0.1142
SEX	0.0183	0.0797	-0.1432	-0.0451	-0.2179	0.0459	-0.1452	1.0000	-0.0272
F.Y.GPA*	-0.0074	-0.0007	0.3989	0.2841	0.2928	0.1541	0.1142	-0.0272	1.0000

TABLE C-4

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR TOTAL SAMPLE FROM SCHOOL C (INCLUDING NON SCORE-REPORTERS)

MATRIX OF ORIGINAL N'S:

	SDQ#4:	SDQ#20:	SDQ#21:	SDQ#22:	SDQ#24:	SDQ#44A:	SDQ#45A:	SDQ#46A:	SDQ#47:	SDQ#48:	SDQ#49:	SDQ#51:
SDQ#4:	3733.	3681.	3687.	3705.	3689.	3733.	3733.	3733.	3669.	3672.	3672.	3666.
SDQ#20:	3681.	3752.	3724.	3737.	3715.	3752.	3752.	3752.	3696.	3695.	3697.	3686.
SDQ#21:	3687.	3724.	3762.	3742.	3723.	3762.	3762.	3762.	3701.	3702.	3706.	3693.
SDQ#22:	3705.	3737.	3742.	3776.	3738.	3776.	3776.	3776.	3717.	3717.	3720.	3709.
SDQ#24:	3689.	3715.	3723.	3738.	3763.	3763.	3763.	3763.	3703.	3703.	3707.	3696.
SDQ#44A:	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SDQ#45A:	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SDQ#46A:	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SDQ#47:	3669.	3696.	3701.	3717.	3703.	3741.	3741.	3741.	3741.	3734.	3732.	3718.
SDQ#48:	3672.	3695.	3702.	3717.	3703.	3743.	3743.	3743.	3734.	3743.	3734.	3721.
SDQ#49:	3672.	3697.	3706.	3720.	3707.	3746.	3746.	3746.	3732.	3734.	3746.	3724.
SDQ#51:	3666.	3686.	3693.	3709.	3696.	3734.	3734.	3734.	3718.	3721.	3724.	3734.
SDQ#52:	3673.	3697.	3704.	3719.	3705.	3744.	3744.	3744.	3732.	3735.	3736.	3726.
SDQ#54:	3666.	3692.	3698.	3713.	3699.	3738.	3738.	3738.	3728.	3730.	3729.	3719.
SDQ#57:	3657.	3683.	3688.	3705.	3691.	3729.	3729.	3729.	3720.	3722.	3720.	3708.
SDQ#5:	3572.	3568.	3572.	3586.	3581.	3611.	3611.	3611.	3563.	3564.	3565.	3556.
SDQ#12:	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SDQ#12H:	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SDQ#18A:	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SDQ#23:	3696.	3731.	3732.	3755.	3731.	3767.	3767.	3767.	3712.	3710.	3715.	3704.
SDQ#50:	3674.	3698.	3704.	3719.	3705.	3746.	3746.	3746.	3733.	3737.	3737.	3724.
SDQ#53:	3674.	3700.	3707.	3721.	3707.	3746.	3746.	3746.	3733.	3735.	3736.	3727.
SDQ#56:	3641.	3666.	3672.	3687.	3674.	3712.	3712.	3712.	3701.	3703.	3703.	3693.
SDQ#58:	3646.	3671.	3676.	3693.	3680.	3717.	3717.	3717.	3706.	3709.	3706.	3696.
SDQ#59:	3667.	3693.	3698.	3715.	3700.	3739.	3739.	3739.	3729.	3731.	3730.	3718.
SDQ#60:	3667.	3692.	3697.	3714.	3701.	3739.	3739.	3739.	3727.	3729.	3728.	3718.
H.S.GPA	3703.	3716.	3723.	3736.	3724.	3765.	3765.	3765.	3704.	3707.	3707.	3700.
SAT-V	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SAT-M	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
TSWE SCORE	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
AGE	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
SEX	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.
F.Y.GPA*	3733.	3752.	3762.	3776.	3763.	3815.	3815.	3815.	3741.	3743.	3746.	3734.

TABLE C-4 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR TOTAL SAMPLE FROM SCHOOL C (INCLUDING NON SCORE-REPORTERS)

MATRIX OF ORIGINAL N'S:

	SDQ#52:	SDQ#54:	SDQ#57:	SDQ#5:	SDQ#12:	SDQ#12H:	SDQ#18A:	SDQ#23:	SDQ#50:	SDQ#53:	SDQ#56:	SDQ#58:
SDQ#4:	3673.	3666.	3657.	3572.	3733.	3733.	3733.	3696.	3674.	3674.	3641.	3646.
SDQ#20:	3697.	3692.	3683.	3568.	3752.	3752.	3752.	3731.	3698.	3700.	3666.	3671.
SDQ#21:	3704.	3698.	3688.	3572.	3762.	3762.	3762.	3732.	3704.	3707.	3672.	3676.
SDQ#22:	3719.	3713.	3705.	3586.	3776.	3776.	3776.	3755.	3719.	3721.	3687.	3693.
SDQ#24:	3705.	3699.	3691.	3581.	3763.	3763.	3763.	3731.	3705.	3707.	3674.	3680.
SDQ#44A:	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SDQ#45A:	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SDQ#46A:	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SDQ#47:	3732.	3728.	3720.	3563.	3741.	3741.	3741.	3712.	3733.	3733.	3701.	3706.
SDQ#48:	3735.	3730.	3722.	3564.	3743.	3743.	3743.	3710.	3737.	3735.	3703.	3709.
SDQ#49:	3736.	3729.	3720.	3565.	3746.	3746.	3746.	3715.	3737.	3736.	3703.	3706.
SDQ#51:	3726.	3719.	3708.	3556.	3734.	3734.	3734.	3704.	3724.	3727.	3693.	3696.
SDQ#52:	3744.	3733.	3722.	3567.	3744.	3744.	3744.	3712.	3737.	3739.	3705.	3708.
SDQ#54:	3733.	3738.	3718.	3559.	3738.	3738.	3738.	3707.	3732.	3735.	3704.	3705.
SDQ#57:	3722.	3718.	3729.	3550.	3729.	3729.	3729.	3700.	3722.	3722.	3693.	3710.
SDQ#5:	3567.	3559.	3550.	3611.	3611.	3611.	3611.	3581.	3565.	3568.	3535.	3539.
SDQ#12:	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SDQ#12H:	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SDQ#18A:	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SDQ#23:	3712.	3707.	3700.	3581.	3767.	3767.	3767.	3767.	3714.	3715.	3682.	3688.
SDQ#50:	3737.	3732.	3722.	3565.	3746.	3746.	3746.	3714.	3746.	3737.	3704.	3710.
SDQ#53:	3739.	3735.	3722.	3568.	3746.	3746.	3746.	3715.	3737.	3746.	3707.	3709.
SDQ#56:	3705.	3704.	3693.	3535.	3712.	3712.	3712.	3682.	3704.	3707.	3712.	3679.
SDQ#58:	3708.	3705.	3710.	3539.	3717.	3717.	3717.	3688.	3710.	3709.	3679.	3717.
SDQ#59:	3732.	3728.	3719.	3560.	3739.	3739.	3739.	3709.	3731.	3733.	3700.	3707.
SDQ#60:	3730.	3724.	3716.	3560.	3739.	3739.	3739.	3709.	3730.	3731.	3697.	3705.
H.S.GPA	3709.	3702.	3692.	3589.	3765.	3765.	3765.	3730.	3710.	3709.	3674.	3680.
SAT-V	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SAT-M	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
TSWE SCORE	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
AGE	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
SEX	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.
F.Y.GPA*	3744.	3738.	3729.	3611.	3815.	3815.	3815.	3767.	3746.	3746.	3712.	3717.

TABLE C-4 (CONTINUED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND STANDARD DEVIATIONS FROM DIAGONAL OF RECONSTRUCTED MATRIX FOR TOTAL SAMPLE FROM SCHOOL C (INCLUDING NON SCORE-REPORTERS)

MATRIX OF ORIGINAL N'S:

	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-M	TSWE SCORE	AGE	SEX	F.Y.GPA*
SDQ#4:	3667.	3667.	3703.	3733.	3733.	3733.	3733.	3733.	3733.
SDQ#20:	3693.	3692.	3716.	3752.	3752.	3752.	3752.	3752.	3752.
SDQ#21:	3698.	3697.	3723.	3762.	3762.	3762.	3762.	3762.	3762.
SDQ#22:	3715.	3714.	3736.	3776.	3776.	3776.	3776.	3776.	3776.
SDQ#24:	3700.	3701.	3724.	3763.	3763.	3763.	3763.	3763.	3763.
SDQ#44A:	3739.	3739.	3765.	3815.	3815.	3815.	3815.	3815.	3815.
SDQ#45A:	3739.	3739.	3765.	3815.	3815.	3815.	3815.	3815.	3815.
SDQ#46A:	3739.	3739.	3765.	3815.	3815.	3815.	3815.	3815.	3815.
SDQ#47:	3729.	3727.	3704.	3741.	3741.	3741.	3741.	3741.	3741.
SDQ#48:	3731.	3729.	3707.	3743.	3743.	3743.	3743.	3743.	3743.
SDQ#49:	3730.	3728.	3707.	3746.	3746.	3746.	3746.	3746.	3746.
SDQ#51:	3718.	3718.	3700.	3734.	3734.	3734.	3734.	3734.	3734.
SDQ#52:	3732.	3730.	3709.	3744.	3744.	3744.	3744.	3744.	3744.
SDQ#54:	3728.	3724.	3702.	3738.	3738.	3738.	3738.	3738.	3738.
SDQ#57:	3719.	3716.	3692.	3729.	3729.	3729.	3729.	3729.	3729.
SDQ#5:	3560.	3560.	3589.	3611.	3611.	3611.	3611.	3611.	3611.
SDQ#12:	3739.	3739.	3765.	3815.	3815.	3815.	3815.	3815.	3815.
SDQ#12H:	3739.	3739.	3765.	3815.	3815.	3815.	3815.	3815.	3815.
SDQ#18A:	3739.	3739.	3765.	3815.	3815.	3815.	3815.	3815.	3815.
SDQ#23:	3709.	3709.	3730.	3767.	3767.	3767.	3767.	3767.	3767.
SDQ#50:	3731.	3730.	3710.	3746.	3746.	3746.	3746.	3746.	3746.
SDQ#53:	3733.	3731.	3709.	3746.	3746.	3746.	3746.	3746.	3746.
SDQ#56:	3700.	3697.	3674.	3712.	3712.	3712.	3712.	3712.	3712.
SDQ#58:	3707.	3705.	3680.	3717.	3717.	3717.	3717.	3717.	3717.
SDQ#59:	3739.	3729.	3702.	3739.	3739.	3739.	3739.	3739.	3739.
SDQ#60:	3729.	3739.	3703.	3739.	3739.	3739.	3739.	3739.	3739.
H.S.GPA	3702.	3703.	3765.	3765.	3765.	3765.	3765.	3765.	3765.
SAT-V	3739.	3739.	3765.	4170.	4170.	4060.	4060.	4060.	4170.
SAT-M	3739.	3739.	3765.	4170.	4170.	4060.	4060.	4060.	4170.
TSWE SCORE	3739.	3739.	3765.	4060.	4060.	4060.	4060.	4060.	4060.
AGE	3739.	3739.	3765.	4060.	4060.	4060.	4060.	4060.	4060.
SEX	3739.	3739.	3765.	4060.	4060.	4060.	4060.	4060.	4060.
F.Y.GPA*	3739.	3739.	3765.	4170.	4170.	4060.	4060.	4060.	4170.

TABLE C-4 (CONCLUDED)

MATRIX OF ORIGINAL N'S WITH N, MEANS AND
STANDARD DEVIATIONS FROM DIAGONAL OF
RECONSTRUCTED MATRIX FOR TOTAL
SAMPLE FROM SCHOOL C (INCLUDING
NON SCORE-REPORTERS)

VALUES FROM DIAGONAL OF RECONSTRUCTED MATRIX AFTER SUBSTITUTING MEANS, SIGMAS AND COVARIANCES FROM EXISTING DATA FOR MISSING DATA:

THE NUMBER OF OBSERVATIONS IS 4170.

VARIABLE	SUMS	SUMS OF SQUARES	MEAN	SIGMA(N)	SIGMA(N-1)
SDQ#4:	16402.9681	71049.9235	3.9336	1.2512	1.2513
SDQ#20:	10900.6823	36738.8983	2.6141	1.4060	1.4062
SDQ#21:	10061.4274	30769.7144	2.4128	1.2479	1.2480
SDQ#22:	8938.5540	22170.8698	2.1435	0.8497	0.8498
SDQ#24:	17357.0848	82472.7367	4.1624	1.5660	1.5662
SDQ#44A:	7855.7772	25688.0989	1.8839	1.6159	1.6161
SDQ#45A:	9443.9843	30822.1398	2.2647	1.5041	1.5043
SDQ#46A:	8831.8742	28448.0340	2.1180	1.5285	1.5287
SDQ#47:	10592.7586	31172.0098	2.5402	1.0112	1.0113
SDQ#48:	10805.4582	32652.6868	2.5912	1.0563	1.0565
SDQ#49:	12522.2451	42059.6805	3.0029	1.0337	1.0339
SDQ#51:	16129.4349	65986.3863	3.8680	0.9289	0.9290
SDQ#52:	13644.9439	49196.9911	3.2722	1.0444	1.0445
SDQ#54:	10501.9743	31256.1686	2.5185	1.0737	1.0738
SDQ#57:	12180.1126	40309.0160	2.9209	1.0653	1.0654
SDQ#5:	18264.3921	84123.0610	4.3800	0.9947	0.9948
SDQ#12:	7867.8008	24558.9482	1.8868	1.5263	1.5265
SDQ#12H:	2418.9279	6830.6139	0.5801	1.1409	1.1410
SDQ#18A:	3339.2792	7204.4183	0.8008	1.0423	1.0424
SDQ#23:	7617.1410	18111.4350	1.8267	1.0033	1.0034
SDQ#50:	12577.9044	41852.6129	3.0163	0.9688	0.9689
SDQ#53:	12404.2472	41086.7475	2.9746	1.0022	1.0023
SDQ#56:	14038.9251	51250.0021	3.3666	0.9777	0.9778
SDQ#58:	11235.5529	34189.1782	2.6944	0.9691	0.9692
SDQ#59:	13038.6387	44919.9035	3.1268	0.9977	0.9978
SDQ#60:	13417.8310	47128.1355	3.2177	0.9737	0.9738
H.S.GPA	13133.1614	42261.1371	3.1494	0.4643	0.4644
SAT-V	1757800.0000	781632200.0000	421.5350	98.7430	98.7550
SAT-M	1965620.0000	969784000.0000	471.3720	101.8370	101.8490
TSWE SCORE	178721.4754	8089733.9788	42.8589	10.1539	10.1551
AGE	76650.9680	1499852.0168	18.3815	4.6686	4.6692
SEX	6361.8177	10745.4600	1.5256	0.4993	0.4994
F.Y.GPA*	10406.8682	27925.7353	2.4957	0.6845	0.6846

TABLE C-5

INTERCORRELATIONS OF VARIABLES
USED IN REGRESSIONS FOR TOTAL CONTROL SAMPLE FROM
SCHOOL C (INCLUDING THOSE WHO DO NOT REPORT SCORES)

	SDQ#4:	SDQ#20:	SDQ#21:	SDQ#22:	SDQ#24:	SDQ#44A:	SDQ#45A:	SDQ#46A:	SDQ#47:	SDQ#48:	SDQ#49:	SDQ#51:
SDQ#4:	1.0000	-0.0027	-0.0325	-0.0615	0.0260	-0.0037	-0.0754	-0.0104	-0.0323	-0.0017	0.0631	-0.0013
SDQ#20:	-0.0027	1.0000	0.0485	0.2927	0.1001	0.0609	0.4214	0.3187	0.1441	0.0540	0.0026	0.2032
SDQ#21:	-0.0325	0.0485	1.0000	0.0595	0.0448	0.0330	0.2010	0.0904	0.0155	0.0149	0.5652	0.1108
SDQ#22:	-0.0615	0.2927	0.0595	1.0000	0.0927	0.0684	0.4996	0.3366	0.1837	0.0655	-0.0036	0.2350
SDQ#24:	0.0260	0.1001	0.0448	0.0927	1.0000	0.0530	0.0853	0.1184	0.0729	0.0166	0.0635	0.1164
SDQ#44A:	-0.0037	0.0609	0.0330	0.0684	0.0530	1.0000	0.1375	0.2569	0.0201	-0.0096	0.0215	0.0394
SDQ#45A:	-0.0754	0.4214	0.2010	0.4996	0.0853	0.1375	1.0000	0.6378	0.2753	0.1538	0.1257	0.2819
SDQ#46A:	-0.0104	0.3187	0.0904	0.3366	0.1184	0.2569	0.6378	1.0000	0.2419	0.1560	0.0763	0.2493
SDQ#47:	-0.0323	0.1441	0.0155	0.1837	0.0729	0.0201	0.2753	0.2419	1.0000	0.3043	0.1201	0.2731
SDQ#48:	-0.0017	0.0540	0.0149	0.0655	0.0166	-0.0096	0.1538	0.1560	0.3043	1.0000	0.1333	0.1274
SDQ#49:	0.0631	0.0026	0.5652	-0.0036	0.0635	0.0215	0.1257	0.0763	0.1201	0.1333	1.0000	0.2166
SDQ#51:	-0.0013	0.2032	0.1108	0.2350	0.1164	0.0394	0.2819	0.2493	0.2731	0.1274	0.2166	1.0000
SDQ#52:	0.0407	0.2592	0.1387	0.3278	0.1733	0.0185	0.3256	0.2611	0.3512	0.1405	0.2713	0.5452
SDQ#54:	0.0218	0.0150	0.1258	-0.0438	0.1173	0.0141	0.0093	0.0221	0.1167	0.2350	0.2923	0.0994
SDQ#57:	0.0272	0.1378	0.0589	0.1614	0.1336	0.0028	0.2141	0.2079	0.3373	0.1482	0.1989	0.3802
SDQ#5:	-0.0049	0.0466	0.0349	0.1109	0.0817	-0.0298	0.0893	0.0479	0.0647	0.0813	0.0682	0.0692
SDQ#12:	0.0377	0.0326	0.0016	0.1066	0.0790	0.0088	0.0783	0.0608	-0.0113	0.0313	0.0127	0.0354
SDQ#12H:	0.0955	0.0729	0.0096	0.1002	0.0635	0.0118	0.1473	0.1006	0.0425	0.0522	-0.0067	0.0500
SDQ#18A:	-0.0169	0.0561	0.0222	0.0981	0.0839	0.1033	0.1224	0.1511	0.1099	0.0745	0.0361	0.0700
SDQ#23:	-0.0686	0.2070	0.0420	0.3603	0.0950	0.0361	0.3259	0.2426	0.1990	0.1227	0.0117	0.1505
SDQ#50:	0.0756	0.1172	0.0113	0.1348	0.1143	-0.0266	0.2142	0.2101	0.3339	0.2626	0.1308	0.2823
SDQ#53:	-0.0008	0.0056	0.0497	-0.0213	0.0956	-0.0299	-0.0201	-0.0065	0.0162	0.0912	0.1813	0.0679
SDQ#56:	0.0438	0.1687	0.0113	0.2092	0.1593	0.0045	0.2088	0.1965	0.1855	0.1545	0.1575	0.3938
SDQ#58:	0.0240	0.0745	0.0649	0.0284	0.1789	-0.0033	0.0653	0.0682	0.1471	0.2019	0.1998	0.1317
SDQ#59:	0.0457	0.1748	0.0314	0.1992	0.1539	-0.0213	0.2719	0.2451	0.4187	0.1637	0.1554	0.4391
SDQ#60:	0.0752	0.1262	-0.0018	0.1416	0.1225	-0.0207	0.2112	0.2037	0.3056	0.1838	0.1028	0.3296
H.S.GPA	0.0523	0.0253	0.0108	0.0913	0.0511	-0.0292	0.0722	0.0501	-0.0096	0.0271	0.0372	0.0502
SAT-V	0.0677	0.0190	-0.0846	0.0375	0.0215	-0.0509	0.1262	0.0753	0.0303	0.0692	-0.1272	-0.0555
SAT-M	0.1146	-0.0290	0.0066	-0.0480	0.0519	-0.0467	-0.0040	-0.0376	-0.0782	0.0502	0.0233	-0.1251
TSWE SCORES	0.0641	0.0084	-0.0675	0.0617	-0.0018	-0.0499	0.1493	0.0710	0.0104	0.0536	-0.0972	0.0055
AGE	-0.0023	0.0279	-0.0095	0.0068	0.0192	-0.0069	0.0186	0.0081	-0.0029	0.0030	-0.0011	0.0046
SEX	-0.0325	0.1020	-0.1814	0.1519	-0.0641	0.0212	0.1288	0.1216	-0.0278	-0.0179	-0.2259	0.0954
F.Y.GPA*	0.0344	-0.0182	-0.0178	0.0484	0.0247	-0.0247	0.0462	0.0100	-0.0026	0.0409	-0.0149	-0.0245

TABLE C-5 (CONTINUED)

INTERCORRELATIONS OF VARIABLES
USED IN REGRESSIONS FOR TOTAL CONTROL SAMPLE FROM
SCHOOL C (INCLUDING THOSE WHO DO NOT REPORT SCORES)

	SDQ#52:	SDQ#54:	SDQ#57:	SDQ#5:	SDQ#12:	SDQ#12H:	SDQ#18A:	SDQ#23:	SDQ#50:	SDQ#53:	SDQ#56:	SDQ#58:
SDQ#4:	0.0407	0.0218	0.0272	-0.0049	0.0377	0.0955	-0.0169	-0.0686	0.0756	-0.0008	0.0438	0.0240
SDQ#20:	0.2592	0.0150	0.1378	0.0466	0.0326	0.0729	0.0561	0.2070	0.1172	0.0056	0.1687	0.0745
SDQ#21:	0.1387	0.1258	0.0589	0.0349	0.0016	0.0096	0.0222	0.0420	0.0113	0.0497	0.0113	0.0649
SDQ#22:	0.3278	-0.0438	0.1614	0.1109	0.1066	0.1002	0.0981	0.3603	0.1348	-0.0213	0.2092	0.0284
SDQ#24:	0.1733	0.1173	0.1336	0.0817	0.0790	0.0635	0.0839	0.0950	0.1143	0.0956	0.1593	0.1789
SDQ#44A:	0.0185	0.0141	0.0028	-0.0298	0.0088	0.0118	0.1033	0.0361	-0.0266	-0.0299	0.0045	-0.0033
SDQ#45A:	0.3256	0.0093	0.2141	0.0893	0.0783	0.1473	0.1224	0.3259	0.2142	-0.0201	0.2088	0.0653
SDQ#46A:	0.2611	0.0221	0.2079	0.0479	0.0608	0.1006	0.1511	0.2426	0.2101	-0.0065	0.1965	0.0682
SDQ#47:	0.3512	0.1167	0.3373	0.0647	-0.0113	0.0425	0.1099	0.1990	0.3339	0.0162	0.1855	0.1471
SDQ#48:	0.1405	0.2350	0.1482	0.0813	0.0313	0.0522	0.0745	0.1227	0.2626	0.0912	0.1545	0.2019
SDQ#49:	0.2713	0.2923	0.1989	0.0682	0.0127	-0.0067	0.0361	0.0117	0.1308	0.1813	0.1575	0.1993
SDQ#51:	0.5452	0.0994	0.3802	0.0692	0.0354	0.0500	0.0700	0.1505	0.2823	0.0679	0.3938	0.1317
SDQ#52:	1.0000	0.2282	0.4628	0.1615	0.0907	0.0972	0.1120	0.2328	0.2975	0.1566	0.4715	0.2543
SDQ#54:	0.2282	1.0000	0.2175	0.1568	0.0669	0.0791	0.0624	0.0353	0.1218	0.3794	0.2075	0.4753
SDQ#57:	0.4628	0.2175	1.0000	0.0527	0.0228	0.0674	0.0774	0.1239	0.2721	0.1090	0.4361	0.2415
SDQ#5:	0.1615	0.1568	0.0527	1.0000	0.5135	0.2043	0.1121	0.2661	0.1877	0.3735	0.2140	0.3314
SDQ#12:	0.0907	0.0669	0.0228	0.5135	1.0000	0.1542	0.0825	0.2560	0.1768	0.2999	0.2070	0.2867
SDQ#12H:	0.0972	0.0791	0.0674	0.2043	0.1542	1.0000	0.2114	0.1212	0.1453	0.1634	0.0987	0.1675
SDQ#18A:	0.1120	0.0624	0.0774	0.1121	0.0825	0.2114	1.0000	0.1366	0.1248	0.1006	0.1036	0.1501
SDQ#23:	0.2328	0.0353	0.1239	0.2661	0.2560	0.1212	0.1366	1.0000	0.1876	0.0989	0.2012	0.1177
SDQ#50:	0.2975	0.1218	0.2721	0.1877	0.1768	0.1453	0.1248	0.1876	1.0000	0.0655	0.3116	0.2570
SDQ#53:	0.1566	0.3794	0.1090	0.3735	0.2999	0.1634	0.1006	0.0989	0.0655	1.0000	0.2265	0.4477
SDQ#56:	0.4715	0.2075	0.4361	0.2140	0.2070	0.0987	0.1036	0.2012	0.3116	0.2265	1.0000	0.2954
SDQ#58:	0.2543	0.4753	0.2415	0.3314	0.2867	0.1675	0.1501	0.1177	0.2570	0.4477	0.2954	1.0000
SDQ#59:	0.5317	0.1771	0.4669	0.1459	0.1088	0.1233	0.1280	0.1993	0.4624	0.0771	0.3918	0.2702
SDQ#60:	0.3438	0.1218	0.3035	0.2083	0.2078	0.1430	0.1467	0.1804	0.7359	0.0803	0.3718	0.2726
H.S.GPA	0.0950	0.0602	0.0350	0.5283	0.8457	0.1273	0.0663	0.2311	0.1841	0.3181	0.2144	0.2413
SAT-V	0.0261	0.0983	-0.0447	0.2758	0.2900	0.2821	0.0228	0.1748	0.2686	0.0775	0.0384	0.2182
SAT-M	-0.0094	0.2645	-0.0709	0.3391	0.3145	0.2432	0.0283	0.0902	0.0548	0.5201	0.0136	0.3422
TSWE SCORES	0.0184	0.0268	-0.0315	0.2358	0.2764	0.2313	-0.0032	0.1580	0.2577	0.0748	0.0502	0.1215
AGE	0.0196	0.0176	0.0135	0.0077	-0.0045	0.0074	-0.0056	-0.0092	-0.0077	-0.0015	0.0079	0.0102
SEX	-0.0533	-0.4023	-0.0379	-0.0334	0.0494	-0.0138	-0.0587	0.0409	0.0187	-0.2294	0.0646	-0.2533
F.Y.GPA*	0.0193	0.0240	-0.0333	0.3074	0.3709	0.1523	-0.0214	0.1452	0.1257	0.1840	0.1043	0.1718

TABLE C-5 (CONCLUDED)

INTERCORRELATIONS OF VARIABLES
USED IN REGRESSIONS FOR TOTAL CONTROL SAMPLE FROM
SCHOOL C (INCLUDING THOSE WHO DO NOT REPORT SCORES)

	SDQ#59:	SDQ#60:	H.S.GPA	SAT-V	SAT-M	TSWE SCORE	AGE	SEX	F.Y.GPA*
SDQ#4:	0.0457	0.0752	0.0523	0.0677	0.1146	0.0641	-0.0023	-0.0325	0.0344
SDQ#20:	0.1748	0.1262	0.0253	0.0198	-0.0290	0.0084	0.0279	0.1020	-0.0182
SDQ#21:	0.0314	-0.0018	0.0108	-0.0846	0.0066	-0.0675	-0.0095	-0.1814	-0.0178
SDQ#22:	0.1992	0.1416	0.0913	0.0375	-0.0480	0.0617	0.0068	0.1519	0.0484
SDQ#24:	0.1539	0.1225	0.0511	0.0215	0.0519	-0.0016	0.0192	-0.0641	0.0247
SDQ#44A:	-0.0213	-0.0207	-0.0292	-0.0509	-0.0467	-0.0499	-0.0069	0.0212	-0.0247
SDQ#45A:	0.2719	0.2112	0.0722	0.1262	-0.0040	0.1493	0.0186	0.1288	0.0462
SDQ#46A:	0.2451	0.2037	0.0501	0.0753	-0.0376	0.0710	0.0081	0.1216	0.0100
SDQ#47:	0.4187	0.3056	-0.0096	0.0303	-0.0782	0.0104	-0.0029	-0.0278	-0.0026
SDQ#48:	0.1637	0.1838	0.0271	0.0692	0.0502	0.0536	0.0030	-0.0179	0.0409
SDQ#49:	0.1554	0.1028	0.0372	-0.1272	0.0233	-0.0972	-0.0011	-0.2259	-0.0149
SDQ#51:	0.4391	0.3296	0.0502	-0.0555	-0.1251	0.0055	0.0046	0.0954	-0.0245
SDQ#52:	0.5317	0.3438	0.0950	0.0261	-0.0094	0.0184	0.0196	-0.0533	0.0193
SDQ#54:	0.1771	0.1218	0.0602	0.0983	0.2645	0.0268	0.0176	-0.4023	0.0240
SDQ#57:	0.4669	0.3035	0.0350	-0.0447	-0.0709	-0.0315	0.0135	-0.0379	-0.0333
SDQ#5:	0.1459	0.2083	0.5283	0.2758	0.3391	0.2358	0.0077	-0.0334	0.3074
SDQ#12:	0.1088	0.2078	0.8457	0.2900	0.3145	0.2764	-0.0045	0.0494	0.3709
SDQ#12H:	0.1233	0.1430	0.1273	0.2821	0.2432	0.2313	0.0074	-0.0138	0.1523
SDQ#18A:	0.1280	0.1467	0.0663	0.0228	0.0283	-0.0032	-0.0056	-0.0587	-0.0214
SDQ#23:	0.1993	0.1804	0.2311	0.1748	0.0902	0.1580	-0.0092	0.0409	0.1452
SDQ#50:	0.4624	0.7359	0.1841	0.2686	0.0548	0.2577	-0.0077	0.0187	0.1257
SDQ#53:	0.0771	0.0503	0.3181	0.0775	0.5201	0.0748	-0.0015	-0.2294	0.1840
SDQ#56:	0.3918	0.3718	0.2144	0.0384	0.0136	0.0502	0.0079	0.0646	0.1043
SDQ#58:	0.2782	0.2726	0.2413	0.2182	0.3422	0.1215	0.0102	-0.2533	0.1718
SDQ#59:	1.0000	0.6049	0.1037	0.1850	-0.0149	0.1629	-0.0026	-0.0042	0.0477
SDQ#60:	0.6049	1.0000	0.2110	0.2698	0.0578	0.2781	-0.0144	0.0370	0.1138
H.S.GPA	0.1037	0.2110	1.0000	0.2832	0.3020	0.2924	-0.0079	0.0654	0.3948
SAT-V	0.1850	0.2698	0.2832	1.0000	0.5380	0.7518	-0.0402	-0.0277	0.3597
SAT-M	-0.0149	0.0578	0.3020	0.5380	1.0000	0.4926	-0.0325	-0.2684	0.3384
TSWE SCORE	0.1629	0.2781	0.2924	0.7518	0.4926	1.0000	-0.0481	0.0673	0.3335
AGE	-0.0026	-0.0144	-0.0079	-0.0402	-0.0325	-0.0481	1.0000	-0.0055	-0.0153
SEX	-0.0042	0.0370	0.0654	-0.0277	-0.2684	0.0673	-0.0055	1.0000	0.0318
F.Y.GPA*	0.0477	0.1138	0.3948	0.3597	0.3384	0.3335	-0.0153	0.0318	1.0000

Appendix D

Mean Values of SAT Scores and College Grade Point Averages for Deaf Students at Colleges Other than Institutions A, B and C for which Data is Available

TABLE D-1

MEAN VALUES OF SAT SCORES AND COLLEGE GRADE POINT AVERAGES
FOR DEAF STUDENTS AT COLLEGES OTHER THAN INSTITUTIONS
A, B AND C FOR WHICH DATA IS AVAILABLE

INSTITUTION SEQUENCE NO.	N	SAT VERBAL MEAN	SAT VERBAL S.D.	SAT MATH MEAN	SAT MATH S.D.	F.Y.A.* MEAN	F.Y.A.* S.D.
1	13	435.	85.7	516.	87.5	2.7	0.545
2	9	633.	59.1	660.	96.0	3.2	0.376
3	7	449.	103.2	516.	140.3	2.5	0.630
4	7	337.	105.7	407.	83.6	3.1	0.303
5	6	375.	76.3	525.	118.6	2.7	0.409
6	5	404.	87.8	388.	91.7	2.4	0.416
7	5	344.	73.4	482.	34.3	2.2	0.702
8	4	360.	127.1	440.	164.8	2.6	0.510
9	4	270.	54.8	400.	51.0	2.1	0.259
10	4	233.	10.9	300.	51.0	2.4	0.437
11	3	547.	33.0	537.	104.0	3.2	0.397
12	3	570.	86.0	490.	53.5	2.1	0.316
13	2	485.	215.0	510.	80.0	2.8	0.925
14	2	460.	20.0	455.	75.0	2.3	0.535
15	2	310.	10.0	465.	25.0	2.8	0.180
16	2	525.	165.0	470.	150.0	3.1	0.320
17	2	315.	105.0	465.	85.0	2.2	0.155
18	2	295.	15.0	340.	40.0	2.0	0.240
19	1	390.	0.0	310.	0.0	1.9	0.0
20	1	370.	0.0	610.	0.0	2.3	0.0
21	1	520.	0.0	620.	0.0	3.3	0.0
22	1	480.	0.0	450.	0.0	3.9	0.0
23	1	420.	0.0	710.	0.0	4.0	0.0
24	1	330.	0.0	420.	0.0	2.4	0.0
25	1	440.	0.0	450.	0.0	1.2	0.0
26	1	390.	0.0	510.	0.0	2.6	0.0
27	1	370.	0.0	510.	0.0	3.1	0.0
28	1	460.	0.0	460.	0.0	3.3	0.0
29	1	330.	0.0	460.	0.0	1.9	0.0
30	1	380.	0.0	630.	0.0	3.6	0.0
31	1	320.	0.0	360.	0.0	1.7	0.0
32	1	240.	0.0	380.	0.0	2.7	0.0
33	1	560.	0.0	610.	0.0	1.5	0.0
34	1	420.	0.0	440.	0.0	2.7	0.0
35	1	400.	0.0	380.	0.0	2.1	0.0
36	1	470.	0.0	560.	0.0	2.1	0.0
37	1	440.	0.0	600.	0.0	2.4	0.0
38	1	480.	0.0	530.	0.0	2.4	0.0
39	1	320.	0.0	520.	0.0	0.8	0.0
40	1	390.	0.0	570.	0.0	2.9	0.0

*ALTHOUGH ALL SCHOOLS WERE EXCLUDED THAT HAD ANY VALUES OUTSIDE THE 0 - 4 SCALE, USUALLY EMPLOYED, FOR FIRST YEAR COLLEGE GRADE POINT AVERAGE, IT IS CONCEIVABLE THAT CERTAIN SCHOOLS HAD SOME OTHER SCALE (BUT NO CASES OUTSIDE THE 0 -4 BOUNDARIES), THUS DISTORTING THE STATISTICS.

TABLE D-1 (CONCLUDED)

MEAN VALUES OF SAT SCORES AND COLLEGE GRADE POINT AVERAGES
FOR DEAF STUDENTS AT COLLEGES OTHER THAN INSTITUTIONS
A, B AND C FOR WHICH DATA IS AVAILABLE

INSTITUTION SEQUENCE NO.	N	SAT VERBAL MEAN	SAT VERBAL S.D.	SAT MATH MEAN	SAT MATH S.D.	F.Y.A.* MEAN	F.Y.A.* S.D.
41	1	520.	0.0	570.	0.0	2.7	0.0
42	1	230.	0.0	260.	0.0	3.3	0.0
43	1	430.	0.0	460.	0.0	3.1	0.0
44	1	390.	0.0	540.	0.0	2.4	0.0
45	1	220.	0.0	350.	0.0	1.9	0.0
46	1	200.	0.0	330.	0.0	2.4	0.0
47	1	470.	0.0	530.	0.0	2.4	0.0
48	1	430.	0.0	450.	0.0	2.1	0.0
49	1	360.	0.0	500.	0.0	2.1	0.0
50	1	610.	0.0	630.	0.0	3.0	0.0
51	1	360.	0.0	550.	0.0	2.7	0.0
TOTAL OVER ALL SCHOOL	115	414.	129.5	486.	123.2	2.6	0.64

*ALTHOUGH ALL SCHOOLS WERE EXCLUDED THAT HAD ANY VALUES OUTSIDE THE 0 - 4 SCALE, USUALLY EMPLOYED, FOR FIRST YEAR COLLEGE GRADE POINT AVERAGE, IT IS CONCEIVABLE THAT CERTAIN SCHOOLS HAD SOME OTHER SCALE (BUT NO CASES OUTSIDE THE 0 -4 BOUNDARIES), THUS DISTORTING THE STATISTICS.